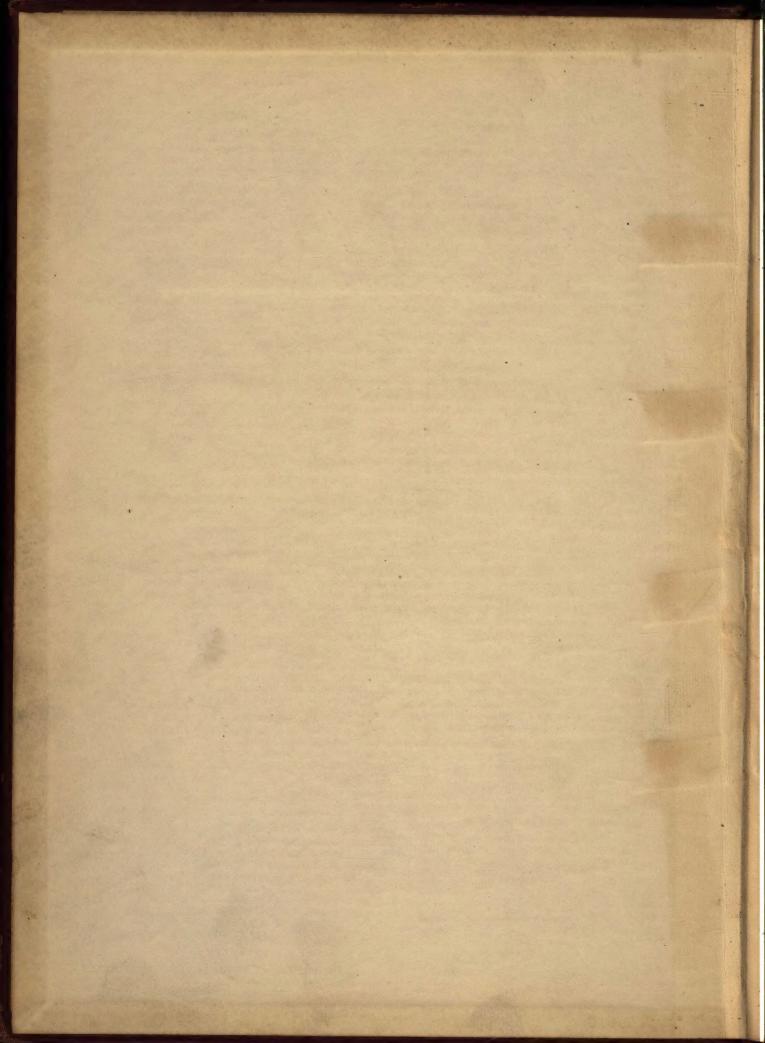
PLUMBING & HEATING SUPPLIES



MILWAUKEE, WISCONSIN CATALOGUE E

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Catalogue E

THE ROBERT ROM COMPANY

Distributors of

MODERN PLUMBING SUPPLIES

Boilers, Radiators and Heating Accessories
National Tube Company's Scale Free Pipe
Byers' Genuine Wrought Iron Pipe
Cast Iron Water Main and Fittings
Hydrants and Gate Valves
Lunkenheimer Brass, Iron and Steel Valves, Oil Cups and Lubricators
Cast and Malleable Iron Fittings
Cast Steel and Hydraulic Fittings
Water Supply Systems
Lupton's Steel Shelving
Tools, Packing and Engineers' Supplies

Office, Show Room and Warehouses

1023-1101 St. Paul Avenue

MILWAUKEE, WISCONSIN

IMPORTANT

For the General Information of the Trade Attention is Called to the Following Well-Established

TRADE CUSTOMS

PIPE

Wrought Pipe is a term used to distinguish Wrought from Cast Pipe. It is construed to mean Standard Pipe, and is generally made from soft steel. Persons desiring to obtain pipe made from Puddled Iron, must designate Genuine Wrought Iron Pipe, for which an extra charge is made.

DAMAGES

We guarantee material sold, but only to the extent of supplying perfect goods for any found defective, and will not allow any claims for labor or consequential damages. The measure of damage shall be the price of any defective piece, such defective piece to be returned before credit will be given.

RETURNED GOODS

When orders have been correctly filled, no credit will be allowed for goods returned, nor will teamsters be permitted to accept goods to be returned, unless a full explanation has been made and our consent obtained. All goods returned—if accepted—will be credited at the same price at which they were charged, less 10 per cent and all shipment expenses.

BREAKAGE

All goods are packed by skilled men. If an article is broken in transit, the condition of the package at its destination is no evidence of its original condition. When goods are shipped to a customer and have been receipted for by a Transportation Company, in good condition, the shipment immediately becomes the property of consignee; no allowance will be made for breakage or loss in transit, and consignee must look to Transportation Company for relief.

CONTRACTS, SALES AND PRICES

All agreements are contingent upon strikes, fires, accidents or delays beyond our control. All prices are subject to change without notice, and all contracts and orders taken are subject to approval of the executive office at Milwaukee, Wisconsin.

CHANGES

We reserve the right to make any changes in detail on our goods, which may, in our opinion, develop an improvement or gain convenience for the operator, without reference to descriptions and illustrations in this catalog.

CLAIMS

All claims for deductions or shortages must be made within ten days from receipt of material.

PRICES, QUOTATIONS

All list prices are subject to change without notice and quotations are made for immediate acceptance only and subject to change without notice.

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Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237	Traps 209 Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86	T T T Branches, Cast Iron, Soil Pipe 97, 98 Junctions, Sewer Pipe 120 Saddles, Cast Iron, Soil Pipe 101 TY Branches, Acid-Proof, Drain Pipe 118 Fittings, Stringer 111 Tabasco Heaters, Tank 257 Taco Heaters, Water 258 Tank Ball Wires 65 Balls, Closet, Rubber 83 Brackets, Expansion 271 Elbows, Closet 66 Floats, Closet 64 Floats, Closet 64 Flush Valves, Closet 65
Sink Trap Standards. 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310	Traps 209 Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, 166–169 Walworth Sigma 166–169 Fittings, Serewed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards. 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards. 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards. 51 Sinks, Enameled Iron. 50 Sinks, Harris. 107 Sinks, Porcelain. 50 Smooth-On Cement, Iron. 311 Snaps, Curtain, Shower. 22 Snips, Tinners'. 307 Soap Dishes, Laundry Tray. 55 Dishes, Lavatory. 78 Holders. 78-81 Holders, Kitchen. 81 Holders, Liquid. 82 Holders and Hand Rails. 78 Tanks, Liquid. 82 Valves, Liquid. 82 Soap and Sponge Holders. 81 Sockets, Malleable Iron. 148 Softeners, Water. 237 Soil, Plumbers'. 310 Soil Pipe, Cast Iron. 96 Pipe Fittings, Cast Iron. 96-105 Pipe Test Plugs. 307	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86	T T T Branches, Cast Iron, Soil Pipe 97, 98 Junctions, Sewer Pipe 120 Saddles, Cast Iron, Soil Pipe 101 TY Branches, Acid-Proof, Drain Pipe 118 Fittings, Stringer 111 Tabasco Heaters, Tank 257 Taco Heaters, Water 256 Balls, Closet, Rubber 83 Brackets, Expansion 271 Elbows, Closet 64 Float Valves, Closet 64 Flush Valves, Closet 65 Guides, Closet 65 Guides, Closet 65 Heaters, Tabasco 257 Nipples 133 Regulators, Arco 268
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110, 111	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 111 Solder 93	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110, 111	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer.110 111 Solder Bushings 92	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110 Solder 93 Solder Bushings 92 Ladles 306	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards. 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Fittings, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110 Solder 93 Solder Bushings 92 Ladles 306 Moulds 306	Traps 209 Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86 Meter, Gas 215	T T T Branches, Cast Iron, Soil Pipe 97, 98 Junctions, Sewer Pipe 120 Saddles, Cast Iron, Soil Pipe 100 TY Branches, Acid-Proof, Drain Pipe 118 Fittings, Stringer 111 Tabasco Heaters, Tank 257 Taco Heaters, Water 256 Tank Ball Wires 65 Balls, Closet, Rubber 83 Brackets, Expansion 271 Elbows, Closet 64 Floats, Closet 64 Floats, Closet 64 Flush Valves, Closet 65 Guides, Closet 65 Heaters, Tabasco 257 Nipples 133 Regulators, Arco 268 Water Gauges, Expansion 219 Tanks, Closet 64 Expansion 271 Septic 120 Soap, Liquid 82
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders, Liquid 82 Valves, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110, 111 Solder 93 Solder Bushings 92 Ladles 306 Moulds 306 Nipples, Brass 118	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86 Meter, Gas 215 Self-Closing 88	T T T Branches, Cast Iron, Soil Pipe 97, 98 Junctions, Sewer Pipe 120 Saddles, Cast Iron, Soil Pipe 100 TY Branches, Acid-Proof, Drain Pipe 118 Fittings, Stringer 111 Tabasco Heaters, Tank 257 Taco Heaters, Water 256 Tank Ball Wires 65 Balls, Closet, Rubber 83 Brackets, Expansion 271 Elbows, Closet 64 Floats, Closet 64 Floats, Closet 64 Flush Valves, Closet 65 Guides, Closet 65 Heaters, Tabasco 257 Nipples 133 Regulators, Arco 268 Water Gauges, Expansion 219 Tanks, Closet 64 Expansion 271 Septic 120 Soap, Liquid 82
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders, Liquid 82 Valves, Liquid 82 Valves, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110, 111 Solder 93 Solder Bushings 92 Ladles 306 Moulds 306 Nipples, Brass 118	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86 Meter, Gas 215 Self-Closing 88	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer.110, 111 111 Solder 93 Solder Bushings 92 Ladles 306 Moulds 306 Nipples, Brass 118 Pots 306	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Serewed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86 Meter, Gas 215 Self-Closing 88 Service, Gas 215	T T T Branches, Cast Iron, Soil Pipe
Sink Trap Standards 51 Sinks, Enameled Iron 50 Sinks, Harris 107 Sinks, Porcelain 50 Smooth-On Cement, Iron 311 Snaps, Curtain, Shower 22 Snips, Tinners' 307 Soap Dishes, Laundry Tray 55 Dishes, Lavatory 78 Holders 78-81 Holders, Kitchen 81 Holders, Liquid 82 Holders and Hand Rails 78 Tanks, Liquid 82 Soap and Sponge Holders 81 Sockets, Malleable Iron 148 Softeners, Water 237 Soil, Plumbers' 310 Soil Pipe, Cast Iron 96-105 Pipe Test Plugs 307 Stacks, Cast Iron, Stringer 110, 111 111 Solder Bushings 92 Ladles 306 Moulds 306 Nipples, Brass 118 Pots 306 Soldering Coppers 307	Traps Water Heaters, Penberthy 210 Steamers, Thawing 309 Steel Fittings, Flanged, Walworth Sigma 166–169 Fittings, Screwed, HPM 170, 171 Stem Nuts, Fuller 85 Packings, Fuller 85 Stems, Fuller 85 Sticks, Bossing 306 Stillson Wrenches, Pipe 300 Stocks and Dies, Pipe, Beaver 283, 287 Pipe, Beaverette 284 Pipe, Nye 283 Pipe, Reed 283 Pipe, Toledo 288–294 Stools, Bath Room 80 Stop and Waste Cocks, Compression, Hays 86 Stoppers, Basin, Rubber 84 Bath, Rubber 84 Sink, Rubber 84 Stops, Compression 86 Corporation 89 Curb 90 Ground Key 90 Lavatory, Compression 86 Meter, Gas 215 Self-Closing 88 Service, Gas 215 Steam, Brass 215	T T T Branches, Cast Iron, Soil Pipe
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Model Bath Room.—In planning a bath room it is desirable to install fixtures that can be kept clean and spotless with the minimum of effort. It is recognized that the china and enameled iron fixtures are easily kept clean with little effort, but the metal trimmings soon discolor and become unsightly if neglected.



Fig. 11

The bath room illustrated here is without exposed metal, piping or screws. All valves on lavatory, bath and shower are fitted with unbreakable china handles with patented overlap concealing the ordinarily exposed nickel spindles, spuds and screws.

LAVATORY.—Vitreous China Lavatory 30x24 Inches with All China Combination Supply and Waste Fitting and Trap to Wall, Completely Encased in China.

CLOSET.—Vitreous China Noiseless
Syphon Jet Bowl with Vitreous China
Tank, White Cellu-enameled Seat
and Cover with Concealed Hinges and
China Cased Posts and China Bolt
Caps......

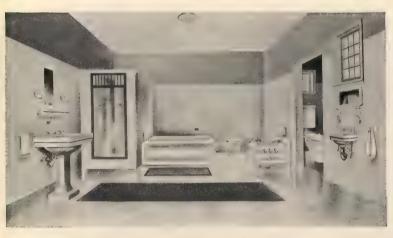


Fig. 12

Model Bathroom "De Luxe" on account of the superior quality of the fixtures therein, its completeness, general arrangement and conveniences lend a dignity and sense of luxury that fully warrants its name. We condense herewith a few of its features.

BATH TUB.—Roomy one-piece built-in type with concealed fixtures, climinating moisture and dirt, and absence of metal parts reduces cleaning efforts.

Shower.—Concealed in a tile stall with all white metal frame and ventilating top provided with heavy glass door, the modern needle bath installed therein gives the user a sense of pleasure in bathing that is indescribable.

SITZ BATH.—This combination foot bath, sitz-

bath, liver spray and bidet spray, because of its beneficent effects, is indispensable in the ultra modern bathroom.

Dental Layatory.—Where strict sanitation is desired and good health thoughts are paramount, this integral stream nozzle fixture is the best that can be furnished.

LAVATORY.—Of pedestal design, it is the handsomest and finest made, and worthily matches the other fixtures. The fixtures permit the mixing of hot and cold water to any desired temperature.

Closet.—All white, quiet acting, in an enclosure of its own it is as near perfection as sanitary science perfected to this time can make it.

Accessories.—All of purest white china of the built-in type, they are of a type and quality to add to the joy and convenience of the owners.



This room is designed for a house in which bath room space is limited and yet retains a pleasing effect without apparent overcrowding.

BATH.—The Bath is made in one piece. enameled white and constructed so as to tile into a recess as illustrated.

SHOWER.—The inviting shower bath, with adjustable head, is built in the wall and may be operated independently without filling the tub.

LAVATORY.—The lavatory, of high grade vitreous china, is the best quality and possesses charm and character. The leg support harmonizes with this type of room. The floor is kept clear of piping; the supply pipes and trap go to the wall.

WATER CLOSET.—The vitreous china syphon jet closet gives a rapid thorough flush, and embodies many new features.

Closet.—The closet which encloses the concealed piping may serve as a linen closet or medicine chest. The long beveled plate glass mirror in the door adds greatly to the appearance of the room.

Model Bathroom of a type within reach of every home builder which adds more than its cost to the value of the home. It is an inexpensive equipment, and intended for houses of moderate cost, apartment or flat buildings. While the fixtures are not elaborate in design, they are of first class quality. The arrangement may be readily changed to suit floor space.

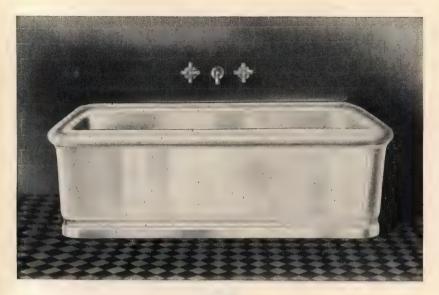
BATH.-5-foot enameled Colonna bath with 3-inch roll rim, fitted with nickelplated compression double bath faucet, nickel-plated connected waste overflow and supply pipes.

LAVATORY.—Enameled iron Bretton, 18x21 inches with integral back and apron, compression faucets, nickelplated supply pipes and trap to wall.

Closet.—Vitreous china syphon washdown bowl, golden oak seat and cover, and enameled iron tank with fittings.



Fig. 22



Solid Porcelain Bath to tile in at back wall with beveled bottom waste outlet, all exposed surfaces glazed, fitted with ½-inch concealed compression supply and standing waste fitting with nickel-plated top nozzle and china handles and escutcheons.

Dimensions

Width outside 31 inches Height outside 19 inches

Fig. 31

Nominal Sizes	5	$5\frac{1}{2}$
Approximate Shipping Weightpounds	925	1100

Waste outlet furnished at right or left hand end. Specify when ordering.

Can also be furnished with exposed supply and waste fitting at right or left hand end.

Prices for porcelain baths are based on kiln-run ware. An extra charge will be made for special selection.

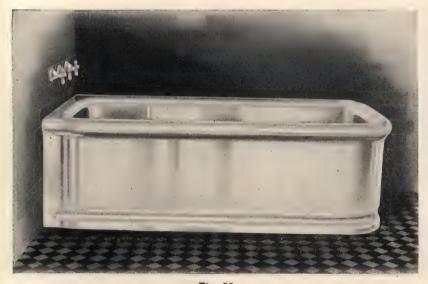


Fig. 32

Solid Porcelain Bath to tile into left hand corner with left hand beveled bottom waste outlet, all exposed surfaces glazed, fitted with ½-inch concealed compression supply and standing waste fitting with top nozzle and all china handles and escutcheons.

Dimensions

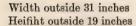
Width outside 31 inches Height outside 19 inches

Nominal Sizes	5	51/2
Approximate Shipping Weight pounds	925	1100

Can be furnished to tile into right hand corner with right hand waste outlet and fittings.

Prices for porcelain baths are based on kiln-run ware. An extra charge will be made for special selection.

Solid Porcelain Bath to tile into recess with left beveled bottom drain outlet, all exposed surfaces glazed, fitted with ½-inch concealed compression supply and standing drain fitting with nickel-plated top nozzle and all china handles and escutcheons.



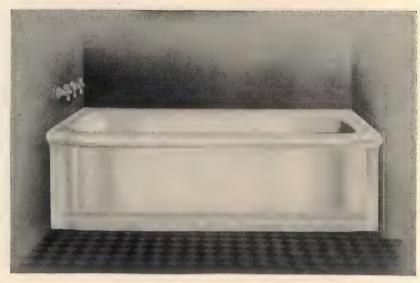


Fig. 41

Can be furnished with right drain outlet and fittings in right end wall or in back wall.

Prices for porcelain baths are based on kiln run ware. An extra charge will be made for special selection.



The Nilson Protecto Bathtub Cover with a 6-inch Extension Bolted to Recess Tub Fig. 42

Nilson Protecto Bathtub Cover furnished with bolts and clamps and heavy kraft paper front apron, with stickers for front panel.

The Nilson Protecto Bathtub Cover is made of Plymetl, the only material found light and strong enough to withstand the abuse and hard usage to which these covers are subjected. Ten men can stand on a cover, when in place, without damaging it. Full directions for attaching are on every cover.

ing it. Full directions for attaching are on every cover.

This cover protects all the exposed glazed surfaces of enameled iron or porcelain built-in baths, from being chipped by mechanics' tools and protects the fine

polish and lustre from being irreparably damaged by the accumulation of lime, plasterers' cement and paint usually found in the bath at the completion of the building.

The method of bolting a cover to a

The method of bolting a cover to a tub is positive and requires but 2 minutes. When in place the plasterer, tileman, bricklayer and painter can use it for a scaffold or work-bench without injury to the tub. It is sealed against use as a toilet, preventing clogged waste pipes and possible staining.

The heavy kraft paper apron with stickers covers the entire front of the tub and on this apron is printed in bold type a warning that anyone removing the cover will be held responsible for damage to the tub. This is notice to the carpenter, plasterer, painter, tile-man and everyone on the job not to disturb the cover. Sufficient clear space is provided around tub rim so that ordinarily even the bottom row of finish tile can be laid.

tom row of finish tile can be laid.

When the cover is bolted in place, the 2 end clamps become imbedded in the wall with the plaster and cannot be removed. Extra end clamps and additional aprons with stickers can be supplied.

a Di	COST	S WILL	I SUCH	ers ca	n be s	иррше	a.								
Pri	ce,	Cove	er with	Pape:	r Apro	n for	41/2-fo	oot Re	ecess	Tub				.each	\$16.00
- 6	4	ш	44	"	41	44	5	44	66	46				- 44	16.00
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6	1	12. "		44	" 6-1	oot R	ecess	Tub.						. 46	4.00
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- 4	4	.44	End	Clam	ps to	Repla	ce The	ose Bu	iried	in W	all	p	er do	z. pr.	2.40
]	No	TE.	4½-fo	ot cov	er wit	h 9-in	ch ext	ension	is fo	or 5-f	oot e	orne	r tub	; 5-foc	tcover

with 9-inch extension is for 5½-foot corner tub.

Prices include heavy paper apron and stickers for attaching.



Cover Protects Tub During Construction



Fig. 51

Combination Seat, Foot, and Child's Bath is an entirely new departure in the development of modern sanitary comforts.

For the usual purpose of bathing it is more convenient and comfortable than the ordinary bath tub, requiring less water and yet giving ample space.

In bathing the feet it is not necessary to remove all of the clothing, as sufficient water can be obtained in the foot bath without wetting the seat. The ledges on front and both sides enable one to massage or treat the feet conveniently, while the dimensions of the bath allow ample space for the feet when standing or sitting.

A children's bath has been an expensive luxury to be found only in the mansions of the rich. One is now presented in combination which is absolutely safe, most convenient and comfortable.

This bath is also much more adapted for the sick or invalid than the ordinary tub, affording a position without physical effort.

The bath is made in porcelain all exposed surfaces glazed and enameled iron with enamel exterior. The porcelain bath may be used in recess or corner or as a wall pattern bath. The enameled iron is made for recess only.

	Vitreous	Enameled
Style	Porcelain	Iron
Length Over All inches	44	441/2
Inside	38	$39\frac{1}{2}$
Width Over All	30	30
" Inside	24	241/2
Depth Outside at Seat	17	16
" Inside " "	15	151/2
Foot Receptor Inside	16x18	16x17
Depth	9	9 .
Approximate Shipping Weight pounds	725	370
Approximate purphing weight		

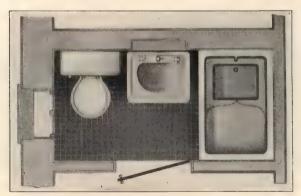


Fig. 52

The above shows floor plan of a bath room 4x7 feet equipped with combination bath.

The combination bath is an entirely new departure in the development of modern sanitary comforts, comprising, as it does, seat, foot bath, shower and child's bath, all in one.

For the usual purpose of bathing it is much more convenient and comfortable than the ordinary bath tub, requiring less water and yet giving ample space.

As a shower bath—it is especially attractive. The arrangement of foot bath and seat permits the taking of head shower or body bath, the latter without wetting the hair, as the deep drain on the seat shelf allows the soapy water to run off quickly thus preventing slipping when a bath mat is not used.

In planning of large apartments, hotels, residences, bungalows or any living quarters the adoption of this fixture has many advantages and is an ideal combination for every method of bathing.



Fig. 53

Viceroy Enameled All Over Onepiece Apron Bath with slope end, for building ½ inch into wall and ½ inch into floor, fitted with combination built-in top supply, 2-inch secret drain, shower, special side discharge head, ½-inch mixer and compression valves for iron pipe supply and riser connections, china handles and escutcheons, nickel-plated curtain rail and white duck curtain.

Outlet in tub at right end

Width over rim 30 inches
Width of exposed rim 3½ inches
Width inside 24 inches
Floor to top of rim 17½ inches
Depth inside, at outlet 17 inches

Nominal Sizes . . . feet $4\frac{1}{2}$ 5 $5\frac{1}{2}$ 6 Length Over Rim. in. 55 61 67 73 Approximate Shipping Weight pounds 540 600 650 700

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.

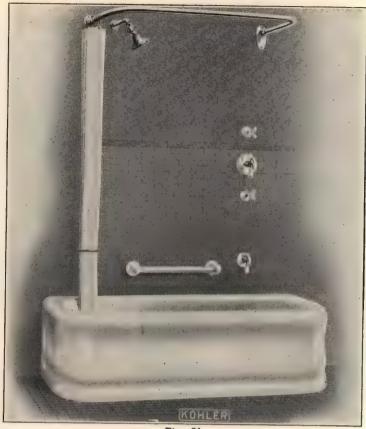


Fig. 61

Enameled Iron Baths

Viceroy-Wall Pattern

NAME REGISTERED U. S. PATENT OFFICE

The views below show the various styles of installation for wall pattern Viceroy baths.



Fig. 62

Left end drain outlet, concealed compression top supply and secret drain fitting in back wall near left end.



Fig. 65

Left end drain outlet, exposed top supply and secret drain fitting at left end.



Fig. 63

Left end drain outlet, concealed compression top supply and secret drain fitting in center of back wall. Can be furnished with drain outlet

at right end.



Fig. 66

Right end drain outlet, exposed top supply and secret drain fitting in front near right end.

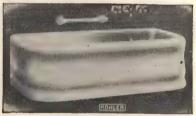


Fig. 64

Right end drain outlet, concealed compression top supply and secret drain fitting in back wall near right end.



Fig. 67

Right end drain outlet, exposed top supply and secret drain fitting at right end.

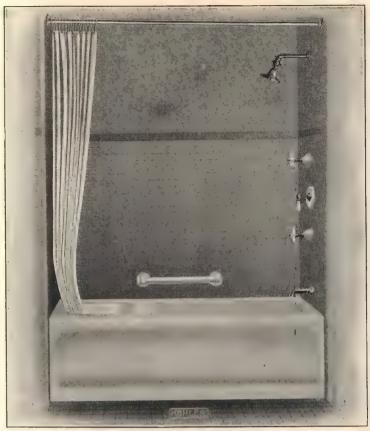


Fig. 71

Viceroy Enameled All Over One-piece Recess Bath with slope end, for building \(\frac{1}{8} \) inch into walls and \(\frac{1}{2} \) inch into floor, fitted with combination built-in over rim supply, \(\frac{1}{2} \)-inch connected drain and overflow, shower, \(\frac{1}{2} \)-inch mixer and compression valves for iron pipe supply and riser connections, china handles and escutcheons, curtain rail and duck curtain.

Outlet in tub at right end.

Width over rim 30 inches
Width of exposed rim $3\frac{1}{2}$ inches
Width inside 24 inches
Floor to top of rim $17\frac{1}{2}$ inches
Depth inside, at outlet 17 inches

Nominal Sizesfeet Length Over Rimin.	$\frac{4\frac{1}{2}}{54}$	5 60	$\begin{array}{c} 5\frac{1}{2} \\ 66 \end{array}$	$\frac{6}{72}$
Approximate Shipping Weightpounds	435	525	580	650

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.

Enameled Iron Baths

Viceroy—Recess Pattern

NAME REGISTERED U. S. PATENT OFFICE

The views below show the various styles of installations for recess pattern Viceroy baths.



Fig. 72

Left end drain outlet, concealed top supply and secret drain fitting in back wall near left end.

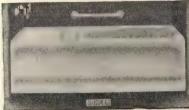


Fig. 75

Left end drain outlet, concealed top supply and secret drain fitting in left end wall.



Fig. 73

Left end drain outlet, concealed top supply and secret drain fitting in back wall at center.

Can be furnished with drain at right end.



Fig. 76

Right end drain outlet, concealed top supply and secret drain fitting in right end wall.



Fig. 74

Right end drain outlet, concealed top supply and secret drain fitting in back wall near right end.

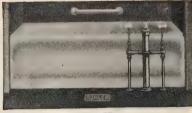


Fig. 77

Right end drain outlet, exposed top supply and secret drain fitting in front near right end.

Can be furnished with left end drain and fitting.

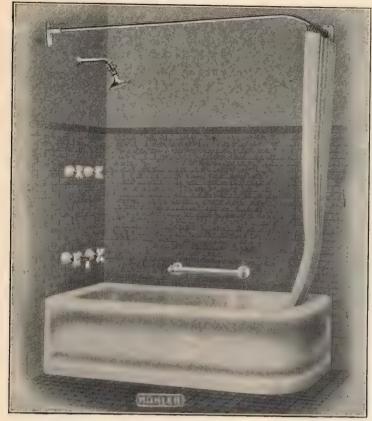


Fig. 81

Viceroy Enameled All Over One-piece Left Corner Apron Bath with slope end, for building ½ inch into walls and ½ inch into floor, fitted with built-in top supply and 2-inch secret drain fitting with ½-inch compression valves for iron pipe supply connections, shower with ball joint head and ½-inch concealed valves for iron pipe supply and riser connections, china handles and escutcheons, 28x44-inch curtain rail and 60x60-inch duck curtain.

Outlet in tub at left end.

Width over rim 30 inches Width of exposed rim $3\frac{1}{2}$ inches Width inside 24 inches Floor to top of rim $17\frac{1}{2}$ inches Depth inside, at outlet 17 inches

Nominal Sizesfeet	41/2	5	51/2	6
Length Over Rimin.	54	60	66	72
Approximate Shipping				
Weightpounds	480	540	585	690

Can be furnished for opposite corner with outlet at either right or left end, and supply and drain fitting or shower as shown with any of these built-in apron baths.

Enameled Iron Baths

Viceroy-Left Corner Pattern

NAME REGISTERED U. S. PATENT OFFICE

The views below show the various styles of installations for left corner Viceroy baths.

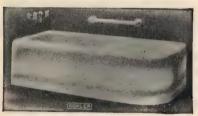


Fig. 82

Left end drain outlet, concealed top supply and secret drain fitting in left end wall.



Fig. 85

Right end drain outlet, concealed top supply and secret drain fitting in back wall near right end.



Flg. 83

Left end drain outlet, concealed top supply and secret drain fitting in back wall near left end.



Fig. 86

Right end drain outlet, exposed top supply and secret drain fitting at right end,



Fig. 84

Left end drain outlet, concealed top supply and secret drain fitting in back wall at center.

Can be furnished with right end drain.



Fig. 87

Left end drain outlet, exposed top supply and secret drain fitting in front near left end.



Fig. 91

Viceroy Enameled All Over One-piece Right Corner Apron Bath with slope end, for building $\frac{7}{8}$ inch into walls and $\frac{1}{2}$ inch into floor, fitted with combination built-in over rim supply, 2-inch secret drain, shower, $\frac{1}{2}$ -inch mixer and compression valves, for iron pipe supply and riser connections, china handles and escutcheons, 28x44-inch curtain rail and 60x60-inch duck curtain.

Outlet in tub at right end.

Width over rim 30 inches
Width of exposed rim $3\frac{1}{2}$ inches
Width inside 24 inches
Floor to top of rim $17\frac{1}{2}$ inches
Depth inside at outlet 17 inches

Nominal Sizesfeet	41/2	5	$5\frac{1}{2}$	6
Length Over Rimin.	54	60	66	72
Approximate Shipping				
Weight pounds	480	540	585	670

Can be furnished for opposite corner, with outlet at either right or left end, and supply and drain fitting or shower as shown with any of these built-in apron baths.

Enameled Iron Baths

Viceroy-Right Corner Pattern

NAME REGISTERED U. S. PATENT OFFICE

The views below show the various styles of installation for right corner Viceroy baths.



Fig. 92

Right end drain outlet, concealed top supply and secret drain fitting in right end wall.



Flg. 95

Left end drain outlet, concealed top supply and secret drain fitting in back wall near left end.



Fig. 93

Right end drain outlet, concealed top supply and secret drain fitting in back wall near right end.



Fig. 96

Left end drain outlet, exposed top supply and secret drain fitting at left end.



Fig. 94

Right end drain outlet, concealed top supply and secret drain fitting in back wall at center.

Can be furnished with left end drain outlet.



Fig. 97

Right end drain outlet, exposed top supply and secret drain fitting in front near right end. Utilla Enameled Iron Right Corner Bath with enameled front and end panels for building 1½ inches into walls and ½ inch into floor, fitted with built-in top supply and 2-inch secret drain fitting with ½-inch compression valves with china cross handles and escutcheons and china lever handle on drain.

Outlet in tub at right end.

Width over rim 29 inches Depth inside 17 inches Height from floor 17½ inches Height over all 18 inches Width of rim 2½ inches



Without Panels, Encased in Tile with Exposed Supply and Drain Fitting Fig. 102



Fig. 101

Nominal Sizes	01/	
Approximate Shipping Weight, Tub Onlypounds	42	48
pproximate Simpping Weight, Tub Omypounds	365	405

Can be furnished for left corner. Specify in ordering.

A Utilla bath tub can be installed in many places where there is not sufficient room for a bath of the usual size. Inside width and depth are the same as in longer baths and a long seating space is made available by a shortening of the slope in the end of the tub.

The Utilla bath is supplied with enameled apron for encasing or without apron for encasing with tile, marble or composition.

A raised ridge on the built-in rim to prevent leakage, makes the bath suited for installation with shower.

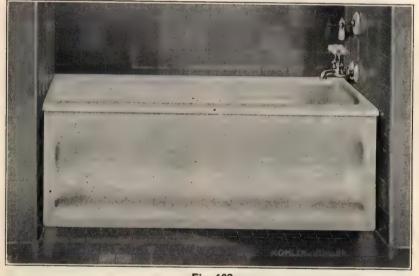


Fig. 103

Nominal Sizes feet Length Over Rim inches	31/2 4	4
Long bit Over 18th	42 4	8
Approximate Shipping Weight, Tub Onlypounds	325 36	60
Also furnished with outlet at left 1 C 's 1 1 1		

Also furnished with outlet at left end. Specify when ordering.

A Utilla bath tub can be installed in many places where there is not sufficient room for a bath of the usual size. Inside width and depth are the same as in longer baths and a long seating space is made available by a shortening of the slope in the end of the tub.

The Utilla bath is supplied with enameled apron for encasing or without apron for encasing with tile, marble or composition.

A raised ridge on the built-in rim to prevent leakage, makes the bath suitable for installation with shower.

Utilla Enameled Iron Recess

Bath with enameled front panel for building 1½ inches into walls and ½ inch into floor, fitted with over rim ½-inch double bath faucet with china cross handles and china escutcheons, 2-inch secret drain with china lever handle and china escutcheon.

Outlet in tub at right end.

Width over rim 29 inches Depth inside 17 inches Height from floor 17½ inches Height over all 18 inches Width of rim 2½ inches



Without Panels, Encased in Tile with Concealed Over Rim Supply Fitting Fig. 104

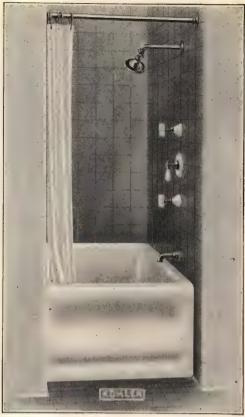


Fig. 111

Alcove Enameled All Over One-piece Apron Bath to tile into recess, for building $\frac{7}{8}$ inch into walls and $\frac{1}{2}$ inch into floor, fitted with combination built-in over rim supply and shower with side discharge head, $\frac{1}{2}$ -inch mixer and compression valves with connections for iron pipe supply, china handles and escutcheons, $\frac{1}{2}$ -inch built-in connected drain and overflow on side, curtain rail and duck curtain.

Outlet in tub at front end.

Width over rim 29 inches
Width of rim at front 3½ inches
Width of rim on sides 2½ inches
Height from floor to top of rim 17½ inches
Depth inside at outlet 17 inches

Nominal Sizefeet	$3\frac{1}{2}$	4
Length over Riminches	$43\frac{1}{2}$	$49\frac{1}{2}$
Approximate Shipping Weightpounds	320	385

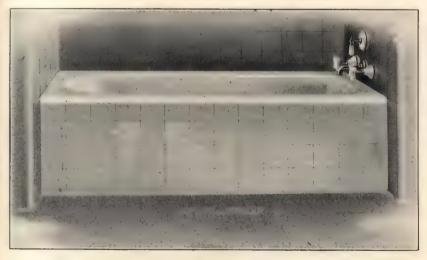


Fig. 112

Universal Enameled Iron Onepiece Recess Bath with slope end for building 1½ inches into walls and from floor to rim on front end, fitted with built-in over rim supply fitting with ½-inch compression valves for iron pipe china handles and escutcheons, 2-inch secret drain with china dial and handle.

Outlet in tub at right end.

Width over rim 30½ inches
Width of rim 3½ inches
Width inside 23½ inches
Bottom of bath to top of rim 18 inches
Depth inside at outlet 17 inches

Rim all around is uniform in size, shape and finish and any or all four sides of bath may be built in from floor to rim only. No tile or other material is regularly supplied with bath.

Nominal Sizes				
Length Over Rim inches				
Approximate Shipping Weightpounds	305	340	375	425

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.



Fittings at Left End Wall Fig. 113

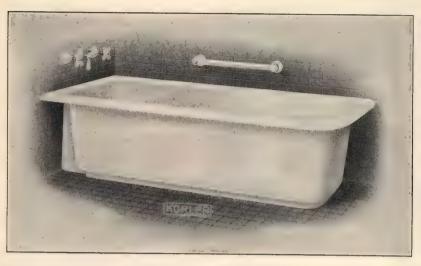


Fig. 121

Cardinal Enameled Iron Onepiece Left Corner Bath for building ½ inch into wall and ½ inch into floor, fitted with built-in top supply and 2-inch secret drain fitting with ½-inch compression valves with china cross handles and escutcheons and china lever handle on drain.

Outlet in tub at left end.

Width over rim 29 inches Depth inside 17½ inches Floor to top of rim 17½ inches Width of built-in rim 2 inches Width of exposed rim 3 inches

Nominal Sizes	54	$60\frac{1}{2}$	661/2
pounds	110	100	100

Can be furnished for opposite corner, with outlet at either right or left end and with supply and drain fittings shown with any of these built-in baths.

Also can be furnished all over enameled and with zinc, ivory or plain white exterior finish.



For Right Corner

Fig. 122

Cardinal Enameled Iron One-piece Recess Bath for building ½ inch into wall and ½ inch into floor, fitted with built-in over rim supply and 2-inch secret drain fitting with ½-inch compression valves with connections for iron pipe, china cross handles and escutcheons and china lever handle on drain.

Outlet in tub at right end.

The 5 and 5½-foot sizes only of recess baths are furnished in straight front pattern.

Width over rim 29 inches Depth inside 17¼ inches Floor to top of rim 17½ inches Width of built-in rim 2 inches Width of exposed rim 3 inches



Fig. 123



Fittings at Left End Wall Fig. 124

Can be furnished with outlet at left end, and with supply and drain fittings shown with any of these built-in baths.

Also can be furnished all over enameled and with zinc, ivory or plain white exterior finish.

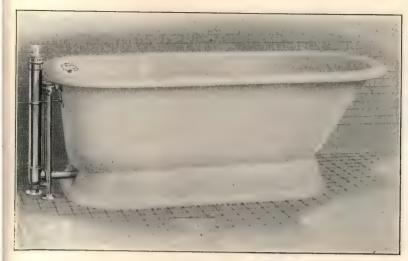


Fig. 131

Baroness Enameled Iron Bath on painted base, fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes, and 2-inch nickel-plated secret drain with indexed china knob.

Width over rim 30 inches Width of rim 3 inches Depth inside, at outlet 17 inches

Nominal Sizes,	4	41/2	. 5	$5\frac{1}{2}$	6
Length Over Rim	48	54	60	66	72
Floor to Top of Rim	213/	221/2	221/2	$22\frac{1}{2}$	213/
Approximate Shipping Weightpounds	320	345	360	420	460

Can be furnished with zinc, ivory or plain white exterior finish.

Also can be furnished with enameled base.

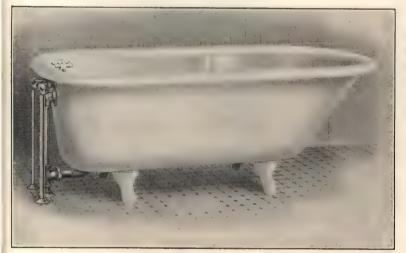


Fig. 132

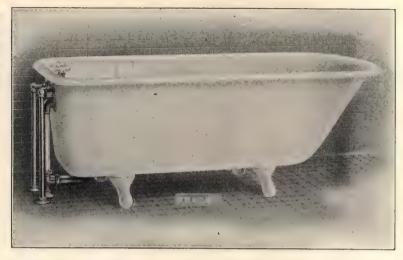
Colonna Enameled Iron Bath on legs, fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes, and 1½-inch nickel-plated connected drain and overflow.

Width over rim 30 inches Floor to top of rim $22\frac{1}{2}$ inches Width of roll rim 3 inches Depth inside, at outlet 17 inches

Nominal Sizes	feet	4	41/2	5	51/4	6
Length Over Rim	inches	48	54	60	66	72
Approximate Shipping Weightp	ounds	240	265	285	335	345

Can be furnished with zinc, ivory or plain white exterior finish.

Rival Enameled Iron Bath on legs fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes and 1½-inch nickel-plated connected drain and overflow.



Width over rim 26 inches Width of roll rim 2 inches

Fig. 141

Nominal Sizes	4	41/6	5	51/2
Length Over Riminches	48	54	60	67
Height to Top of Rim			$22\frac{1}{2}$	23
Depth Inside, at Outlet	17	17	17	175%
Approximate Shipping Weightpounds				

Can be furnished with zinc, ivory or plain white exterior finish.



Fig. 142

Brevoort Enameled Iron Sitz Bath on painted base, fitted with nickel-plated brass bell supply and 2-inch secret drain fitting, ½-inch compression valves and supply pipes, china handles and knob.

Front to back of rim 32½ inches Width over rim 30¼ inches Width of rim 3 inches Floor to top of rim at front 15 inches Floor to top of rim at back 23½ inches Depth inside at outlet 10½ inches

Approximate Shipping Weight.....pounds 300

Can be furnished with zinc, ivory or plain white exterior finish.

Also can be furnished with enameled base if desired.



Fig. 143

Athearn Enameled Iron Foot Bath on painted base, fitted with nickel-plated brass bell supply and 2-inch secret drain fitting, ½-inch compression valves and supply pipes, china handles and knob.

Length over rim 24½ inches Width over rim 21½ inches Floor to top of rim 15½ inches Width of rim 2½ inches Depth inside at outlet 11½ inches

Approximate Shipping Weight.....pounds 145

Can be furnished with zinc, ivory or plain white exterior finish.

Also can be furnished with enameled base if desired.

Badger Bath Drain and Overflow

Concealed connected drain and overflow for built-in tubs, 11/2-inch size, with lever operating through overflow.

Price.....each \$10.13

No panel is required for its installation. The few working parts consisting of chain and metal stoppers can be replaced through the front. The stopper is not concealed in the back wall, but is in the tub. It can be easily lifted for cleaning, and is operated by an indestructible bead chain which also tends to keep the tube clear, as its movement loosens any lint or sediment that may collect.



Fig. 151

No. 14 Connected Drain and **Overflows**

1½-inch concealed heavy pattern connected drain and overflow with 1½-inch outside diameter tail piece, outlet of drain 11/2inch iron pipe male. Has metallic slip joint.

Price, No. 14 Rough Brass with Nickel-plated Trimmings . each



Assembly for Horizontal Outlet

No. 1100 Connected Drains and Overflows



Nickel-plated adjustable connected drain and overflow, 13% inches, with chain and rubber stopper.

Standing Bath Drains and Overflows



N. P. 2-inch bath, drain and overflow with China knob for use outside of rim, with bath on feet or base.

No. 430

Price, No. 430each \$12.30

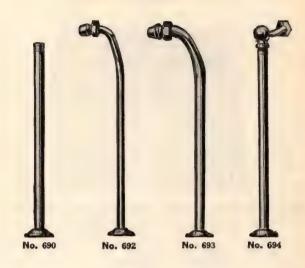
No. 433

Same as above except for Conred and Piercon baths. Price, No. 433

.....each \$12.80



Bath Supply Pipes



Price, No. 690 Seamless Straight Bath Supply Pipe, ½-inch Iron Pipeeach	\$2.05
Price, No. 691 Same as No. 690 except with Wheel	4.50
Handle Stop	4.50
Universal Connection, %-inch O. D. Tubing each	1.90
Price, No. 693 Offset Supply Pipe, ½-inch Iron Pipe each Price, No. 694 Ball Ell Offset Supply Pipe, ½-inch Iron	4.20
Pipeeach	3.35
Price, No. 695 Same as 694 except with Wheel Handle Stopeach	5.80

No. 3939 90° Female Bath Faucet Couplings



Price, No. 3939, Finished and Nickel-plated. per pair \$2.25

Nickel-plated Shampoo Connections

No. 1909

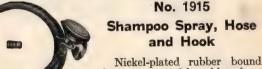
Nickel-plated brass hose coupling with valve for bath

supply spouts.
Price, ½-inch...each \$3.55



supply bath spouts. Price, 1/2-inch... each \$1.20 1.80

with Thread for Bath Cock each 1.20



brass spray, with rubber hose and hook.

Price, as Described..... \$3.00

No. 33 Quick Compression Double Bath **Faucets**



Nickel-plated quick compression double bath faucet with china indexed front handles, without couplings.

No. 3831 Compression Double Bath Faucets With Four-arm China Handles



Price, No. 3831 Nickel-plated.....each \$7.80

Above price includes locknuts only. Supply couplings and hose spray couplings are extra.

No. C-4600 Quaturn Quick Compression **Double Bath Faucets** With China Side Handles



Quaturn quick compression work has a standardized interchangeable working unit which is the same in all quaturn faucets. The seat of the faucet is renewable and there is no wear on the body. Quaturn faucets close with the pressure—no danger of automatic opening.

Price, Nickel-plated with Locknuts onlyeach \$7.59

No. 4700 Quaturn Quick Compression Bath **Faucets**



Nickel-plated Quaturn quick compression double bath faucet with side china index lever handles and china soap dishes. Connections for 3/4-inch iron pipe male. Couplings extra.

No. 30 Hofbil Over Rim Bath Fillers

For Built-in Baths

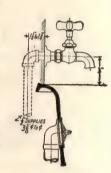


Nickel-plated over rim bath filler with male unions for ½-inch I. P. with 4-arm solid china handles and china escutcheons.

Price, No. 30, as Described. ea. \$6.50 " 30, with Four-ball China Indexed Handles and Nickel-plated Escutcheons.ea. 5.75

The Hofbil over rim bath filler can be furnished with expansion type shampoo connection at extra charge.

The Hofbil over rim bath filler is designed for use over built-in baths with regular drilling as shown in line drawing.



No. 13 Over Rim Bath Supply Fittings

Concealed compression over-rim bath supply fitting with 1/2-inch valves, nickel-plated nozzle and china hanvalves, dles and escutcheons.



Price....each \$12.00

H & B Concealed Bath Supply and Drain Fittings



Fig. 163

H & Bx13. over rim nozzle, compression bath supply fitting with 1/2-inchbuilt-in valves, nickel-plated spout, china cross handles and china escutcheons, with
H & Bx14,
1½-inch
heavy pattern rough brass connected drain

and overflow with 1½-inch O. D. tail piece; outlet of drain tee threaded male for 1½-inch pipe, Exposed parts nickel-plated.

Fitting has metallic slip joints and can be assembled for horizontal outlet.

Specify make and style of tub when ordering.

Prices, No. x13and x14 Combination as Shown..... \$35.20

Exposed Bath Supply and Drains



For Legless Baths
Nickel-plated top nozzle bath supply
and standing drain fitting with compression valves, china handles and
knob, nickel-plated supply pipes and
nickel-plated escutcheons.

Specify make and style of tub when ordering.

For Single Shell Baths

Price, No. 4 ½-Inch Valves, 2-Inch Drain each Price, No. 6 ¾-Inch Valves, 2½-Inch Drain each 40.00

For Double Shell Baths

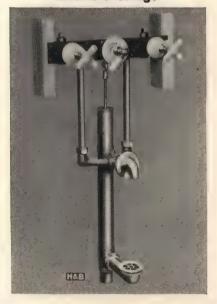
Price, No. 3 ½-Inch Valves, 2-Inch Drain each \$32.50 Price, No. 5 ¾-Inch Valves, 2¼-Inch Draineach 41.00

Exposed Bath Supply and Wastes



Nickel-plated exposed top nozzle, bath supply and standing waste fitting with compression valves, nickel-plated supply pipes and china cross handles and knob and nickel-plated escutcheons, for outside of rim of enameled bath tubs on legs or base.

No. 7 Concealed Bath Supply and Drain Fittings



Compression concealed bath supply and standing drain fitting with ½-in. valves, china cross handle and china escutcheons, nickel-plated top supply nozzle, galvanized pipe connections between valves and spout, 2-in. concealed standing drain with 1½-inch outlet on drain tee and 1½-inch O. D. tail piece, china lever handle and escutcheon.

Price, No. 7. ______each \$30.00

No. 115 Dececo All White China Bath Supply and Drain Fittings



Dececo all white china bath drain and supply fitting with concealed compression valves and top nozzle supply with china housing.

No			115HC	115HD
Wall	End	Side	End	Side
Sizeinches	1/2	1/2	3/4	8/4
Price each	\$29.10	32.25	33.25	37.40

No. 120 Dececo All White China Bath Supply and Drain Fittings



Dececo all white china bath drain and supply fitting with concealed compression valves and over rim supply with china housing.

No		120 HB	120HC	120HD
Wall	\mathbf{End}	Side	End	Side
Sizeinches	1/2	1/2	3/4	3/4
Price each	\$31.65	35.80	35.80	39.85

No. 125 Dececo All White China Bath Supply Fittings



Dececo all white china supply fittings with over rim nozzle with china housing.

No	125HA	125HB
Sizeinches		3/4
Price each	\$15.85	21.60

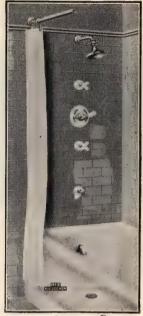


Fig. 181 PATENTED

Niedecken Combination Shower, bath supply and drain with ½-inch concealed type Niedecken mixer with china dial, compression shower and bath control valves with china handles, ½-inch shower arm, 4-inch cast brass adjustable shower head, top supply nozzle and 2-inch concealed bath drain with china lever handle.

Approximate Shipping Weight.

Curtain rail, snaps and curtain extra.

This fixture is especially designed for use with built-in type of bath tub.



Triplex Combination Shower, Bath Supply and Drain with concealed compression valves and china cross handles and china escutcheons, two-way control valve with china lever handle and china escutcheon, vitreous china shower head with nickel-plated arm and china escutcheon, china over rim spout, lift drain with china lever handle operating through overflow.

Approximate Shipping Weight

..... pounds 50

Flg. 182

This fixture is designed for simplicity and economy, as one hot and one cold valve, connected to a two-way valve, supply the shower and the tub, eliminating the use of two extra shower valves.

The two-way valve is so constructed that the shower and tub cannot be shut off at the same time while the supply valves are open, which prevents water from backing up in the system.



Niedecken Nickel-Plated Shower with 1/2-inch concealed type Niedecken Mixer (patented) with china dial and handle, 1/2-inch shower arm, lever handle flow control, and 4-inch cast brass adjustable shower head.

Approximate Shipping Weightpounds 11

Regularly furnished with china dial or with nickel-plated engraved dial, if desired.

The parts of the mixer are easily accessible. If, after long wear, repairs become necessary or it is necessary to rewasher, only a screwdriver is required for the work.



Fig. 184

Niedecken Nickel-Plated Shower with 1/2-inch concealed type Niedecken Mixer (patented), concealed control valve with china handle, 1/2-inch shower arm with 4-inch cast brass adjustable shower head and shampoo.

Approximate Shipping Weight.....pounds 20

This shower may be furnished with china dial or with nickel-plated engraved dial.

Supplies to mixer must be fitted with check valves.

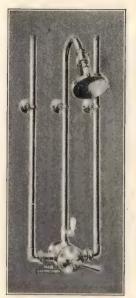


Fig. 191

Niedecken Nickel-Plated Shower with ½-inch exposed type Niedecken Mixer (patented), supply pipes to ceiling, ½-inch gooseneck riser pipe, lever handle flow control, and 4-inch cast brass adjustable shower head. Supplies are 9 inches from center to center.

Approximate Shipping Weight.....pounds 25

This shower combination may be furnished with supplies to wall or floor; also with loose key stops on supply pipes.



Fig. 192

Niedecken Nickel-Plated Shower with ½-inch exposed type Niedecken Mixer (patented), supply connections to wall, ½-inch gooseneck riser pipe, lever handle flow control, and 4-inch cast brass adjustable shower head. Supplies are 9 inches from center to center.

Approximate Shipping Weightpounds 16

This shower combination may be furnished with supplies to ceiling or floor, also with loose key stops on supply pipes.



Fig. 193

Uno Niedecken Shower for side installation with ½-inch exposed type Niedecken Mixer (patented), ½-inch riser pipe, shower arm, flow control with 30-degree elbow connection, 4-inch cast brass shower head, 24x36-inch curtain ring with ceiling support and duck curtain.

Approximate Shipping Weight, Shower Only... pounds 60
The Uno Niedecken Shower can be installed at either end
or side of tub and assembled for shower head and mixer at

either right or left.

This fixture is designed especially for installation over the ordinary bath on feet which is already in place.



Fig. 194

Parkway Shower and Bath Combination consisting of ½-inch nickel-plated bath supply spout with 2-way lever handle control, ½-inch nickel-plated riser pipe, 3-inch nickel-plated Marvel shower head, adjustable ball joint and nickel-plated wall plate.

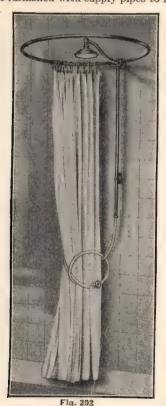
The Parkway Shower Combination is designed to meet the needs of a shower where an over-the-rim tub filler has been installed without a shower. By unscrewing the old spout and replacing it with the Parkway, a neat and moderate priced installation can be obtained without tearing down the wall.

Size.....inches ½ ¾
Approximate Shipping Weight
.....pounds 12 15



Niedecken Nickel-Plated Shower with ½-inch exposed type Niedecken mixer, nickel-plated dial and lever handle, flow control with china handle, ½-inch supply connections to wall, nickel-plated riser pipe, rigid shower arm, 6-inch shower head, 30-inch curtain ring, duck curtain, snaps and hold-back hock.

Approximate Shipping Weight.....pounds 40 Also can be furnished with supply pipes to floor.



Portable Shower with nickel-plated riser pipe, 24-inch curtain ring, offset shower arm, 4½-inch shower head with removable face, white duck curtain and hooks, rubber hose. Approximate Shipping Weight.....pounds 10



Nickel-Plated Concealed Compression Valve Shower with 1/2-inch valves, swivel discs, renewable seats, china handles and escutcheons, 1/2-inch shower arm and 4-inch cast brass adjustable shower head.

Riser pipe is not furnished.

Approximate Shipping Weight.....pounds 15



Fig. 204

PATENTED

Niedecken Shower Stall with ½-inch special concealed type Niedecken shower integral with stall, Niedecken mixer with china dial and handle, nickel-plated shower arm with lever handle flow control and 4-inch cast brass adjustable shower head, curtain rail, duck curtain and hooks, nickel-plated strainer for 2-inch drain. Height of stall, 6 feet.

Door openings and hallways determine the maximum size

of stall. After installation the interior and exposed exterior must be finished with waterproof enamel point

must be mushed with waterproof enamer	paint.		
No	M20	M30	M40
Width, Outsideinches	30	32	36
Depth, Outsideinches	32	32	36
Approximate Shipping Weight pounds	350	375	425
	000	010	3220



Flg. 211

Niedecken Industrial Type Shower with ½-inch exposed type rough nickel-plated Niedecken Mixer (patented), lock shield flow control, wall support, 4-inch cast brass rough nickel-plated shower head, 30-degree elbow connection and pipe supports.

Piping is not furnished.

Approximate Shipping Weight.....pounds 11
Also furnished with concealed type rough Niedecken Mixer

with rough nickel-plated dial,

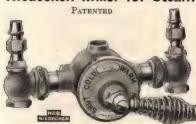
This shower is especially designed for industrial plants. gymnasiums, etc., where a highly polished nickel-plated fixture is not desired.

Niedecken Mixers Rough Nickel-plated—With Brass Lever Handle Tapped for Iron Pipe Concealed Mixers



No.	Size Inches	Price Each	No.	Inches	Price Each
N.R. 1	1/2	\$18.40	N.C.R. 1	1/2	\$16.65
N.R. 2	1/2 3/4	24.55	N.C.R. 2	1/2 3/4	23.70
N.R. 3	1	47.35	N.C.R. 3	1	47.35

Niedecken Mixer for Steam



Suitable for showers, wash sinks, etc., where steam is available and hot water is not. The discharge outlet must never be fitted with shutoff stop.

No			V.R.S. 3
Size inches		3/4	1
Price, Rough Nickel-Plated.each	\$29.00	36.00	61.65

Niedecken Mixers

PATENTED



Showing Accessibility of Mixer

The Niedecken Mixer is a type of shower control thoroughly efficient, immediate in action, and gives perfect control under all conditions.

All working parts of the Niedecken Mixer, even to the valve seats, can be easily replaced if it becomes necessary after years of use. In action the Mixer is such as to make changes in temperature gradual. Starting with cold, the temperature can be increased until the desired degree is reached. Cold water is admitted first and hot water gradually added. As the hot water increases, the cold water is reduced, thus making this an economical device in regard to the quantity of hot water used—an important point to consider in large shower installation.

The Mixer can be set to a fixed maximum temperature, preventing waste of hot water. Ideal results can be obtained when the pressures of cold and hot water are the same. The Mixer can be furnished to take care of great differences in pressure if specified when ordering.



N. C. 1 Concealed Type

Showers should always be installed with the Mixer on the side and near the front of the stall so that adjusting of water temperature can be done before entering. For hotels and residences it is advisable to place the shower head 5 feet 6 inches jabove the floor, making it possible to take a bath without wetting the head.

The most important matter to consider in planning a shower installation is the water supply. The main feeders or supplies to a battery of showers must be of ample size to take care of the full battery of showers and all other fixtures they are supposed to supply.

It is always advisable to have the supplies to the Mixer fitted with loose key stops; they facilitate the rewashering of the Mixer and can be used to reduce excessive pressure. Showers that are not equipped with valves controlling

N. F. 1 Exposed Type
PATENTED

flow of water from the shower head are furnished with flow control.

When the positive stop or shutoff is placed in discharge side of Mixer, the supplies must be fitted with check valves.

Check valves prevent hot water backing into cold water supply when Mixer is not closed and the shower simply shuts off by stop in discharge from Mixer.

Exposed Niedecken Mixers Finished and Nickel-Plated

No	N.F 1	N.F.2	N.F. 3
Connectionsinches	1/2	3/4	1
Centersinches	9	91/2	12
Priceeach	\$23.70		\$52.90
Add for Loose Key Stops per pair	3.30	4.00	8.80
Add for Check Valves per pair	3.50	4.00	8.80

Concealed Niedecken Mixers

	With China Dial a	nd Handle		
No.	******	NC 1	NC 2	NC 3
Connections	inch	11.0. 1	14.0.2	14.0.3
Design of the control	· · · · · · · · · · · · · · · · · · ·	es /2	9/4	1
Frice	eac	eh \$21.00	\$28.00	\$52.80
Add for Loose I	Key Stopsper pa	ir 7.35	10.00	

No. 1242 Compression Shower Valves

Built-in compression shower valve, Loxon china handle and bell china adjustable escutcheon.



Sizeinches 1/2 Price, No. 1242. . . each \$4.40

No. 1240 Compression Shower Valves



Built-in compression shower valve with by-pass, swivel disc stem and renewable seat, china cross handle and bell china escutcheon.

Size.....inches 1/2 Price, No. 1240 . . . each \$4.40

Niedecken Shower Flow Control Valves

PATENTED



Lever Handle Type Fig. 221

Permits control of water from showerhead. Concealed types of Niedecken Showers have flow control placed in shower arm. For residence use valve is lever handle type but for hotels and institutions use of lock shield type is suggested. Exposed types of showers have flow control valve placed in the control control valve placed immediately at outlet of mixer and is either lever handle or lock shield type, depending on use shower is intended for.

Flow control valve is not a positive shut-off, consequently check valves are not required in supplies to the mixer.



No. 150 Dececo All White China Shower Heads

(PATENTED)

With encased shower arm.

Diam. Head. inches 41/2 Price, No. 150 . each \$17.50

No. 700 Vitreous China Shower Heads



This head overcomes the objectionable corroding common to the brass head and requires no polishing to keep clean. Diameter of face, 4½ inches; n. p. brass spud, ½ inch. Price, No. 700.....each \$2.40

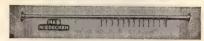


No. 551 Shower Heads

Nickel-plated cast brass shower head with adjustable ball joint for ½-inch iron pipe.

Size.....inches Price No. 551 . . . each \$2.50 3.60

No. 10 Curtain Rails



One-inch O.D. nickel-plated tubing with flanges and curtain hooks. Give length when ordering.

No. 11 Curtain Rails



Nickel-plated corner curtain rail, 28x44 inches. each \$14.00 Price, No. 11.

No. 13 Curtain Rails



Nickel-plated U shaped curtain rail. Price, No. 13..... each \$24.00

White Duck Shower Curtains

Me to los alle stelled		ror	Snower	Stalls	
	No.	Fixture Size Ft.	Curtain, Width	Inches Length	Price Each
	1	21/2	36	75	\$5.40
	2	3	42	75	6.40
	3	$3\frac{1}{2}$	48	4.4	7.20
	4	4	54	4 +	8.00
		For	Recess	Baths	
	5	$4\frac{1}{2}$	60	72	\$9.00
	6	5	66	72	10.00
	7	$5\frac{1}{2}$	72	72	10.40
	8	6	78	72	11.20
		For	Corner	Baths	
	9	$4\frac{1}{2}$	84	72	\$12.00
	10	5	90	72	13.20
	11	$5\frac{1}{2}$	96	72	14.00
	12	6	102	72	15.00
Les de de	13	42x27-inc		72	10.00
	14	42x27-inc	h 96	72	14 00

No. 1736 Curtain Hooks

42x27-inch 96 No. 1737 Curtain Snaps





Price, N. P... per doz. \$.80 Price, N. P... per doz. \$.80 No. E260 Hold Back Curtain Hooks

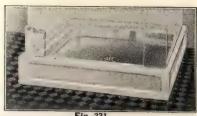


Solid cast brass hold back hook. Poiished and nickel-Price, No. E260 each \$.79

No. E262 Hold Back Curtain Hook and



Chain type hold back hook polished and nickel-plated. Price No. E262.....each \$.45



Porcelain Shower Receptor with center outlet, nickelplated brass outlet strainer and connection for 2-inch lead pipe.

Size over all 36x36 inches Size over all 42x42 inches Height outside 8 inches Height outside 8 inches 36x36 42x42

Approximate Shipping Weight pounds 260 350

All sides paneled and top grooved for shower enclosure.

Prices on porcelain shower receptors are based on kiln-run

An extra charge will be made for special selection.



Fig. 232

Cascade Enameled Iron Shower Receptor on base, with center outlet, nickel-plated brass strainer, with outlet for 2-inch lead or iron pipe for solder or calked joint.

Size over rim 36x36 inches
Size over rim 42x42 inches
Size inches
Size inches
Size inches
Size 36x36
Size 36x36
Size 36x36
Size 36x36

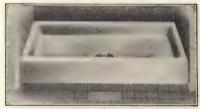
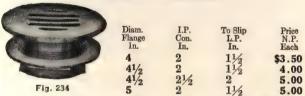


Fig. 233

Cataract Enameled Iron Recess Shower Receptor to build 1¼ inches into walls and ½ inch into floor with apron, with center outlet, nickel-plated brass strainer with outlet for 2-inch lead or iron pipe for solder or calked joint.

Size over rim 36x36 inches Size over rim 42x42 inches Depth inside 3¾ inches Apron 5 inches Size inches Size inches Size 36x36 42x42 Approximate Shipping Weight pounds 200 250

Cast Brass Strainers



No. 246 Adjustable Ball Joints



Nickel-plated brass adjustable ball joint, ½-inch iron pipe male and female connection.

Price, No. 246.....each \$1.22

C & S Glass Shower Doors

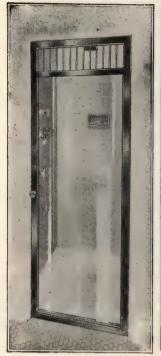




Fig. 235

Fig. 236

C & S shower doors are made from heavy nickel silver or nickel-plated brass and constructed so as to make them absolutely waterproof throughout.

C & S doors have glass of best quality polished plate, ¼ inch thick, imbedded in pure rubber to prevent breakage.

A heavy nickel silver continuous piano hinge is used on all C & S doors unless otherwise ordered.

A cut glass knob of best quality is fastened to outside rail of door and a metal pull of nickel silver on the inside. A strong and substantial spring catch is mortised in the door, keeping it properly closed when stall is in use.

The bottom rail of door has a metal water shed attached to the inside of same to carry all drippings into the receptor. To prevent any splash from getting out underneath the door there is attached a metal bound rubber strip that extends down and onto the sill or rim of receptor.

All C & S Shower doors are furnished with heavy nickel silver or nickel-plated brass angles having metal bound rubber attached to the rabbet for door to strike against, thereby preventing any splash getting out of the stall and into the bathroom proper.

Doors are perfectly fitted to the angles and all necessary screws, lead plugs, etc., required to hang same to the jambs are furnished with each order.

C & S Shower Doors are standardized to fit openings: 27x78 inches, 25x74 inches, 26x76 inches and 24x72 inches. All other sizes are special and quotations furnished on application.

The following rules should be carefully observed when ordering:

Give exact size of openings between jambs, both in height and width.

Whether nickel silver or nickel-plated brass door.

Whether door is to have grille vent or without.

Whether door is to be hinged on right or left jamb when facing stall.

Whether door is for tile or marble stall. Marble jambs should be at least $1\frac{1}{2}$ inches thick.

A detail drawing showing construction furnished on application.



Fig. 241

Vitreous China Straight Front Lavatory with oval basin, integral supply nozzle with hooded overflow, anti-splash rim, plain square vitreous china pedestal and nickel-plated wall supports, fitted with compression supply valves with china cross-arm handles and escutcheons, pop-up drain fitting with china knob and escutcheon, nickel-plated supply pipes to wall with china handle stop valves and china escutcheons and nickel-plated P trap with china escutcheon.

Slab 20x24 inches Slab 22x27 inches Basin 12x16½ inches Basin 12x16½ inches

....inches 20x24 22x27Approximate Shipping Weight...pounds 175



Fig. 242

Vitreous China Straight Front Lavatory with eval basin, hooded overflow, anti-splash rim, plain square vitreous china pedestal, nickel-plated wall supports, nickel-plated combination supply and pop-up waste fitting with china cross-arm handles and china escutcheons, nickel-plated supply pipes to wall with china handle stop valves and china escutcheon, 1½-inch nickel-plated P trap and china escutcheon. china escutcheon.

	Slab 20x24 inches Slab 22x27 inches	Basin 12x16½ Basin 12x16½	inches
ze		inches	90-

Size	Weightpounds	20x24	22x27
Approximate Shipping		170	175



Fig. 243

Vitreous China Straight Front Lavatory with oval basin, integral supply nozzle, hooded overflow, anti-splash rim, vitreous china leg with rod and nickel-plated wall brackets, fitted with compression supply valves with china cross-arm handles and escutcheons, pop-up drain fitting with china knob and escutcheon, %-inch nickel-plated supply pipes to wall with china handle stop valves and china escutcheons, nickel-plated P trap and china escutcheon.

Slab 20x24 inches Basin 12x161/2 inches

20x24 135



Flg. 244

Vitreous China Straight Front Lavatory with oval basin, hooded overflow, anti-splash rim, vitreous china leg with rod and nickel-plated wall supports, nickel-plated combination supply and pop-up drain fitting with china cross-arm handles and china escutcheons, nickel-plated supply pipes to wall with china handle stop valves and china escutcheons, 11/4-inch nickel-plated P trap and china escutcheon.

> Slab 18x20 inches Basin 10x14¼ inches Basin 12x16½ inches Slab 20x24 inches

.....inches 18x20 20x24Approximate Shipping Weight..... pounds



Flg. 251

Vitreous China Straight Front Lavatory with integral back, oval basin with hooded or plain overflow and anti-splash rim, vitreous china leg with rod and concealed hang-er, nickel-plated compression faucets with china cross-arm handles, pop-up drain fitting with china knob and escut-cheon, nickel-plated supply pipes to wall with loose key stop valves and china escutcheons, nickel-plated P trap and china wall escutcheon.

	Basin 10x14 ¹ / ₄ Basin 12x16 ¹ / ₂		6 inches	
SizeApproximate Shipping	Weight	inches	18x20 125	20x24



Fig. 252

Vitreous China Straight Front Lavatory with oval basin, integral supply nozzle, hooded overflow and antisplash rim, concealed brackets with support built in wall, compression supply valves with china cross-arm handles and escutcheons, pop-up drain fitting with china knob and escutcheon, nickel-plated supply pipes to wall with china handle stop valves and escutcheons, nickel-plated P trap and china wall escutcheon.

5.	lab 20x24	inches]	Basin	$12x16\frac{1}{8}$	inches	
Size	Shipping	Weight			inches	20x24



Fig. 253

Vitreous China Straight Front Lavatory with integral back, oval basin, hooded or plain overflow, anti-splash rim and concealed hanger, nickel-plated compression faucets with china cross-arm handles, pop-up drain with china knob and escutcheon, nickel-plated supply pipes to wall with loose key stop valves and china escutcheons, nickelplated P trap and china wall escutcheon.

Slab 18x20 inches Slab 20x24 inches Basin 10x14¹/₄ inches Basin 12x16¹/₄ inchesinches 18x20 20x24 Approximate Shipping Weight.....pounds 110 120



Fig. 254

Vitreous China Round Front Space-Saver Lavatory with integral back, oblong basin, hooded or plain overflow, anti-splash rim and concealed hanger, nickel-plated companies plash rim and concealed hanger, nickel-plated companies plant and the splant an pression faucets with 4-ball brass china index handles, %-inch nickel-plated supply pipes to wall with loose key stop valves and china wall escutcheons, nickel-plated P trap with china escutcheon and nickel-plated P. O. plug, chainstay with about the plate of the p with chain and rubber stopper.

Length of back 24 inches Basin 9½x16¾ inches Height of back 5 inches	
Size	15x24 105



Fig. 261

Filmore Enameled Iron Pedestal Lavatory with slab, D pattern basin with patent overflow, rear outlet and apron all in one piece, enameled iron pedestal, nickel-plated combination supply and lift drain fitting with compression valves, china cross handles, china knob and china escutcheons, %-inch supply pipes to wall with china indexed stops, and 1½-inch nickel-plated P trap.

 Slab 20x28 inches
 Basin 12x15 inches
 Apron 4 ½ inches

 Slab 24x34 inches
 Basin 14x18 inches
 Apron 4 ½ inches

 Size
 inches
 20x28
 24x34

 Approximate Shipping Weight
 pounds
 170
 200



Fig. 262

Belmore Enameled Iron Pedestal Lavatory with slab, D pattern basin with patent overflow, rear outlet and apron all in one piece, enameled iron pedestal, nickel-plated combination supply and lift drain fitting with compression valves, china cross handles, china knob and china escutcheons, %-inch nickel-plated supply pipes with china indexed stops, and 1½-inch nickel-plated P trap.

 Slab 20x28 inches
 Basin 12x15 inches
 Apron 4½ inches

 Slab 24x34 inches
 Basin 14x18 inches
 Apron 4½ inches

 Size
 inches
 20x28
 24x34

 Approximate Shipping Weight
 pounds
 175
 210

Can be furnished with fittings shown on any other lavatories.



Fig. 263

Columbia Enameled Iron Pedestal Lavatory with square slab, D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron pedestal, nickel-plated combination compression supply and lift drain fitting with china cross handles, china knob and escutcheons, sinch nickel-plated supply pipes to wall with stop valves and 1½-inch nickel-plated P trap.

 Slab 20x24 inches
 Basin 12x15 inches
 Apron 5 inches

 Slab 22x27 inches
 Basin 14x18 inches
 Apron 5 inches

 Size
 inches
 20x24
 22x27

 Approximate Shipping Weight
 pounds
 175
 200

Can be furnished with fittings shown on any other lava-



Fig. 264

Bevo Enameled Iron Built-in Lavatory for building %-in. into wall, with two depressed soap cups cast in slab, D pattern basin with patent overflow and rear outlet, apron and concealed hanger flange all in one piece, enameled iron hexagonal leg, combination supply and lift drain fitting with compression valves with china cross handles and china escutcheons, and china knob on drain, %-inch nickel-plated supply pipes to wall with china indexed stops and 1½-inch nickel-plated P trap.

Slab 19x24 inches Basin 12x15 inches Apron 5 inches

Approximate Shipping Weight.....pounds 160
Can be furnished with fittings shown on any other lavatory.



Fig. 271
Emmet Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated com-pression faucets with china cross handles, china handle lift

waste through slab, %-inch nickel-plated supply pipes to wall, 1½-inch nickel-plated P trap.

Emmet Slab 18x24 inches Basin 10½x16½ inches Back 12 inches Basin 12 x16½ inches Back 12 inches Basin 14x18 inches Back 12 inches Siza ...inches 18x24 20x24 22x27 110 125 140 Approx. Ship. Weight pounds 110 125 140
Can be furnished with fittings shown on any of the other

lavatories.



Fig. 272

Cecil-Bretton Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, depressed soap dish, cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, 3/8-inch nickel-plated supply pipes to wall, 11/4-inch nickel-plated P trap, drain plug and chain stay bolt.

Cecil Bretton Bretton | Slab 17x19 inches | Basin 10½x14¾ in. | Slab 18x21 inches | Basin 11x15 inches | Slab 19x24 inches | Basin 12x15 inches | Back 6 inches Back 8 inches Back 8 inches Back 10 inches .. inches 17x19 18x21 19x24 Approximate Shipping Weight pounds 75 90 105
Can be furnished with any other fittings, except the 17x19-inch which cannot be furnished with combination fit-

tings or lift drain through slab.



Fig. 273

Narobol Enameled Iron Lavatory with slab, basin with patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, lift drain with china handle through back, %-inch nickel-plated supply pipes to wall, and 1¼-inch nickel-plated P trap.

Slab 14x26 inches Basin 98/4x161/2 inches Back 51/2 inches Approximate Shipping Weight.....pounds 80 Cannot be furnished with lift drain through slab, secret

drain or combination fittings.

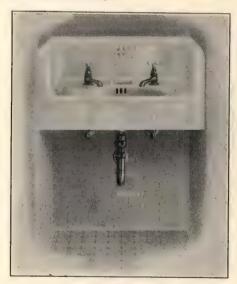


Fig. 274

Alco Enameled Iron Recess Lavatory with slab, D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back, end pieces and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with chain cross handles, 38-inch nickelplated supply pipes to wall, lift drain with china handle for operating through back, and 11/4-inch nickel-plated P trap.

Slab 18x24 inches Slab 20x26 inches Basin 12x15 inches Basin 12x15 inches Back 7½ inches Back 8 inches

Size ... inches 18x24 Approximate Shipping Weight ... pounds 120 Size Can be furnished with fittings shown on any other lavatories.



Fig. 281

Abury Enameled Iron Corner Lavatory with slab, D pattern basin with rear outlet, enameled soap dish cast in slab, draining into patent overflow, back, right end and apron all in one piece, concealed wall hangers, nickel-plated compression faucets, with china cross handles, 3/6-inch nickel-plated supply pipes to wall, lift drain with china cross handle through back and 11/4-inch nickel-plated P trap.

Slab 18x24 inches Basin 12x15 inches Back 10 inches Slab 20x24 inches Basin 12x15 inches Back 12 inches

Also furnished with fittings as shown on other lavatories.



Fig. 282

Osborne Enameled Iron Corner Lavatory with D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, %-inch nickel-plated supply pipes to wall, 1½-inch nickel-plated P trap, drain plug and chain stay bolt.

Can be furnished with fittings shown on any other lavatories except combination supply and secret drain fitting.



Fig. 283

Kenneth Enameled Iron Corner Lavatory with slab, D pattern basin with pa ent overflow and rear outlet, back and apron all in one piece, concealed wall hangers, nickel-plated combination supply and lift waste fitting with compression valves, china cross handles and china escutcheons, \(\frac{3}{6} - \text{inch} \) nickel-plated supply pipes and \(\frac{1}{4} - \text{inch} \) nickel-plated P trap.

Length, on sides 16½ inches Basin 11x14 inches Back 6 inches
Approximate Shipping Weight.....pounds 90



Fig. 284

Kenneth Enameled Iron Corner Lavatory with slab, D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, \(^3\)/₆-inch nickel-plated supply pipes to wall, 1½-inch nickel-plated P trap, drain plug and chain stay bolt.

Length on sides 161/2 inches Basin 11x14 inches Back 6 inches

Approximate Shipping Weight pounds 90

Can be furnished with fittings shown on any other lavatories except combination supply and secret drain fitting.



Fig. 291

Clare Enameled Iron Lavatory with slab, D pattern basin with rear outlet, depressed soap cup cast in slab, draining into patent overflow, and back all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, \[^3\]\%-inch nickel-plated supply pipes to wall, 1\[^4\]\/-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 18x21 inches Basin 10½x16½ inches Back 8 inches

Approximate Shipping Weight.....pounds 70

Can be furnished with fittings shown on any other lavatories.



Fig. 292

Moore Enameled Iron Lavatory with slab, D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, and back all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, 3/8-inch nickel-plated supply pipes to wall, 11/4-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 17x19 inches Basin 10½x14¾ inches Back 6 inches

Approximate Shipping Weight.....pounds 65

Can be furnished with fittings shown on any other lavatories except combination fitting or lift drain through slab.



Fig. 293

Kennedy Enameled Iron Corner Lavatory with slab, center outlet oval basin, depressed soap dish cast in slab, draining into patent overflow, and back all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, 3%-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Length on sides 161/2 inches Basin 11x14 inches Back 6 inches

Approximate Shipping Weight.....pounds 70

Can be furnished with fittings shown on any other lavatories except combination supply and secret drain fitting.



Fig. 294

Bijou Enameled Iron Corner Lavatory with slab, center outlet, reund basin, depressed soap dish cast in slab, draining into patent overflow, and back all in one piece, concealed wall hangers, nickel-plated compression faucets, with fourball handles and china indexes, %-inch nickel-plated supply pipes to wall, 1½-inch nickel-plated P trap, drain plug and chain stay bolt.

Length on sides 16 inches Basin 1134 inches Back 51/2 inches

Approximate Shipping Weight.....pounds ,60

Can be furnished with fittings shown on any other lavatories except combination supply and secret drain fitting.



Flg. 301

Sanita Enameled Iron Dental Lavatory with slab, back, oval basin and depressed tumbler holder all in one piece, concealed hanger, nickel-plated compression basin faucet with china index, 1½-inch P trap and special drain plug.

Slab 12x13 inches Basin 7x9 inches Back 5 inches

Approximate Shipping Weight.....pounds 30

Can be furnished enameled upper surface only, or enameled all over.



Fig. 302

Enameled Iron Dental Lavatory with slab, oval basin, apron and depressed tumbler holder, enameled iron pedestal, nickel-plated compression basin faucet with china cross handle, 1½-inch P trap and special drain plug.

Slab 12x13 inches Basin 7x9 inches Apron 3 inches
Height to top of rim 36 inches

Approximate Shipping Weight.....pounds 100



Fig. 303

Beaufort Enameled Iron Barbers' Lavatory with four depressed soap cups cast in slab, draining into basins, on two enameled pedestals. Fitted with quick acting compression shampoo mixing faucet with hose and spray, compression faucets, 3/8-inch special combination hot and cold water supply pipes, supplying basin and shampoo faucets, drain plugs, 11/4-inch deep seal P traps, special double connection, 11/2-inch drain to floor and chain stay bolts.

Slab 26x46 inches Basins 14x18 inches Apron 5 inches



Lavatory Supply and Waste **Fittings**

No. 17

PATENTED

Combination lavatory supply and waste fitting with compression valves, china handles, china escutcheons and china knob.

For enameled iron or vitreous china lavatories.

Price, No. 17each \$25.00

No. 627H Dececo All White Lavatory **Fittings**



Dececo all white china lavatory supply and drain fitting with concealed compression valves for integral spout lava-

Price, No. 627Heach \$18.50

No. 628 Dececo All White Lavatory **Fittings**



Dececo all white china lavatory supply and drain fitting with concealed compression valves.

For any style vitreous or enameled iron lavatory.

No. 632 Dececo All White Lavatory **Fittings**



Dececo all white china lavatory supply and waste fitting with encased compression faucets and waste. Price, No. 632HA with Compression Basin Faucets

Price, No. 632HB with Self-Closing Basin Faucets ..each \$20.00

.....each 25.00



No. 480 Teck Lavatory Supply and Drain Fittings

Combination Supply and Pop-Up Drain Fitting, with nickel-plated spout, nickel silver pop-up drain, compression valves with encased washers, china cross handles, china escutcheons and china knob. Adjustable for drill-ings for enameled iron or vitreous china lavatories.

Price, No. 480, 31/2-Inch Spout each \$20.00
Price, No. 482, 5-Inch
Spout for Hooded Overflow.each 21.00 Supply valves rewashered from

No. 484 Teck Lavatory Supply and Drain **Fittings**

Combination Supply and Pop-Up Drain Fitting, with china spout, nickel silver pop-up drain, compression valves with encased washers, china cross handles, china escutcheons and china knob. Adjustable for drillings for enameled iron or vitreous china lavatories.

Price, No. 484, 31/2-Inch Spout.....each \$22.00 Price, No. 488, 5-Inch Spout each 23.00 Supply valves rewashered from top of lavatory.



No. 494 Teck Lavatory Supply and Drain **Fittings**

Combination Supply and Pop-Up Drain Fitting, with china spout and china soap dish, nickel silver pop-up drain, compression valves with encased washers, china cross handles, china escutcheons and china

Adjustable for drillings for enameled iron or vitreous china lavatories.

Price, No. 494, with China Spout and Soap Dish.....each \$25.00
Supply valves rewashered from top of lavatory.

No. 473 Teck Pop-Up Lavatory Drains

Teck Pop-Up Lavatory Drain with china knob through slab, one-piece china soap dish and escutcheon, nickel-silver pop-up plug with 1¼-inch nickel-plated tail piece.

Price, No. 473, as Described . . . each \$9.00

Can furnish 1½-inch tail piece and solid nickel silver knob if desired.

This drain is provided with ample adjustment to fit the various sizes and types of lavatories. It pops shut when the knob is down. No friction in the stuffing box.

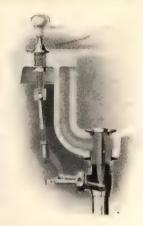


No. 470 Teck Pop-Up Lavatory Drains

Nickel-plated Teck pop-up lavatory drain through slab, with china knob.

Price, with Metal
Escutcheon...each \$5.50
Price, with China
Escutcheon...each 6.00

This drain is provided with ample adjustment to fit the various sizes and types of lavatories. It pops shut when the knob is lifted and open when the knob is down. No friction in the stuffing box.





Teck Pop-Up Lavatory Drains

Teck Pop-Up Lavatory Drain with china cross handle through back of lavatory, nickel silver pop-up plug and 1¼-inch nickel-plated tail piece.

Price, No. 474, For Enamel Iron Lavatory each \$8.00

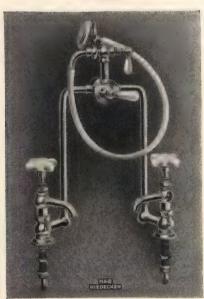
Price, No. 475, For China Lavatory each \$8.00

Can furnish 11/2-inch tail piece if desired.

This drain is provided with ample adjustment to fit the various sizes and types of lavatories. It pops shut when the knob is lifted and open when the knob is down. No friction in the stuffing box.

No. 6000 Combination Shampoo and Basin Fittings

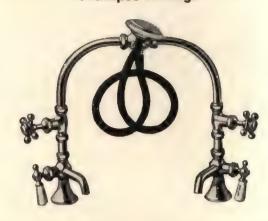
PATENTED



Niedecken combination shampoo and basin supply fitting with exposed Niedecken mixer, shampoo control and compression basin faucets with china cross handles.

The centers of basin faucets are adjustable, so that this fitting can be attached to almost every style of lavatory.

No. 139H Combination Basin Supply and Shampoo Fittings



Nickel-plated combination basin and shampoo fitting, quick compression basin supply with china handles, compression stops with 4-ball china index handles, slip joint tee in arch, spray and rubber tubing.

Supply 12 inches center to center; height, 13 inches.

No. 70 Quick Compression Shampoo Mixing Faucets



Nickel-plated brass quick acting compression shampoo mixing faucet with indexed china handles, swing tube, rubber bound spray, and ½-inch iron pipe female threaded inlets. Price, No. 70......each \$18.00

No. 607 Dececo All White Lavatory Fittings



Dececo all white china lavatory supply and waste fittings with encased compression faucets and pop-up waste with china lever handle through back.

Price, No. 607.....each \$19.00



PATENTED Fig. 331

Niedecken Nickel-Plated Shampoo Fitting with 1/2inch exposed type Niedecken mixer, 1/2-inch supplies to wall and wall flanges lever handle shampoo control stop with hose, spray and hook.

Approximate Shipping Weight.....pounds 8

Ideal for use in barber shops. hospitals, etc.

Compression Basin Faucets



No. 20, 4-ball Handle



No. 20 China Handle

Price, No. 20 Compression Basin faucet with No. 2 China Index Handle and Stuffing Box, N.P. each Price, No. 20 Compression Basin faucet with No. 4 all China Handle and Stuffing Box, N. P. each

\$3.50 4.00

No. 12 Compression Basin Faucets



Nickel-plated compression basin faucet with 4-ball china index handle.

Price, No. 12. each \$2.90

No. 3311 Quick Compression Basin Faucets



Nickel-plated quick compression basin faucet with china index four-arm handle.

Price, No. 3311.....each \$4.00



No. 2300 Quaturn Quick Compression Lavatory Faucets

Nickel-plated combination quick compression lavatory faucet with indexed china lever

It opens to full flow on oneeighth turn of the handle and comes to a stop at one-quarter turn. The tail piece is 4 inches from center to center.

Price.....each \$10.00



No. 12085 Plain with Taper End with Taper End Price, No. 12085, %-inch O. D. Taper End S. J. with ½-inch I. P. Slip Nut at Bottom, N. P. per pair \$3.30 Price, No. 12156, %-inch Taper End with S. J. at Top and 3%-inch I. P. Thread at Bottom, N. P. per pair 3.50 Price, No. 12345, %-inch Taper End, with S. J. at Top, Stop and %-inch I. P. Thread at Bottom, N. P. per pair 7.50 ...per pair

Lavatory Supply Pipes



Price, No. 30, 7/6-inch O.D., 3/8-inch I.P. Slip Joint per pair \$3.00 Price, No. 30, %-inch O.D., ½-inch I.P. Slip 3.25 Joint. per pair Price, No. 31, %-inch O.D., ½-inch I.P. Slip 3.00 Joint per pair 3.25

Crawford **Lavatory Connections**

For slip joint end to fit coupling nut on shank of basin faucet. Threaded end for 3/8-inch iron pipe supply.

Price, No. 28, Straight...per pair \$1.25 29, Angle.... 1.25

No. 28



No. 29

No. 7108 Quick Compression Basin Faucets



Nickel-plated quick compression basin faucet with china lever handle, indexed.

Center of body to center of spout outlet, 334 inches.

Price, No. 7108 ... each \$3.75
Add for Stuffing Box ... "35

No. 3300 Quick Compression Basin Faucets



Nickel-plated quick compression basin faucet with china index lever handle.

Price, No. 3300.....each \$3.75

No. C-2100 Quaturn Quick Compression Basin Faucets With Top Handle



Nickel-plated Quaturn quick compression basin faucet with china index lever handle.

No. 2200 Quaturn Quick Compression Basin Faucets



Quaturn nickel-plated quick compression basin faucet with china lever side handle, indexed.

Center of faucet to center of spout outlet, $3\frac{1}{2}$ inches. Diameter of flange, $2\frac{1}{4}$ inches. Bottom of flange to end of tail pieces, $4\frac{3}{4}$ inches. Diameter of shank, $\frac{1}{3}$ 6 inch.

Price, No. 2200each \$4.25

No. 103 Self-Closing Ball-Bearing Basin Faucets



Nickel-plated self-closing ball-bearing semi-low-down basin faucet with 4-ball china index handle, hot or cold.

Price, No. 103.....each \$5.60

No. 631 Dececo Encased Basin Faucets



All white china encased basin faucet with china housing and china handle indexed.

Price, No. 631 Compression. each \$5.00

" " 631 Self-closing " 7.00

No. 7100 Elita Self-closing Basin Faucets



Nickel-plated self-closing basin cock with lever handle.

Boston Self-closing Basin Faucets



Fig. 341

Price, Regular Pattern, N.P.each \$3.95

Fuller Basin Cocks



Price,	No.	0,	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\$3.25 4.00
	и		with Union, N.P	4.25 5.00

Pantry Faucets Fuller Pantry Faucets Price, No. 0 Fin. or N. P. each N. P....each \$4.50 Add for China Handle . each \$.75 Hose End..... .30 Union in Body... .50 Compression Pantry Faucets Price, No. 1 Fin. or N. P. . . ea. \$3.75 2 " Add for Stuffing Box Add for 4-ball China each Indexed Handles Add for Hose End each .30

Brass Traps



Milwaukee Basin and Sink Traps



No. 99 with P. O. Plug

Size Inches	PRICE,	EACH N. P.
1½ 1½ 1½	\$6.50 9.50	\$7.50 10.50

If without P.O. plug, deduct \$1.75.

No. 94 with Sink Connection

Size	PRICE.	E's cor	Size	D	77
Inches	Rough	N. P.	Inches	PRICE, Rough	N. P.
11/4	\$5.50	\$6.50	11/2	\$8.50	\$9.50
If wi	ithout sink	connection,	deduct \$1.	75.	

Femco Deep Seal Anti-Syphon Traps



The body is made of heavy drawn brass joined in the center by a solderless water tight joint. Made in 17 or 20gauge. Size...

Centrifugal Brass P Traps

Deep Seal-Anti-syphon



Cleanout plug full size of body. Inlet or outlet bends 17 or 20-gauge.

Cast body and nuts.

Inlet to slip 11/4 or 11/2-inch patent overflow plug sink or urinal connection.

No.		Size Inches	Price Each
476	•	11/4	\$6.50
477		11/2	8.50

Centrifugal Brass S Traps

Deep Seal-Anti-syphon

Cleanout plug full size of body.

Inlet and outlet bends 17 or 20gauge.

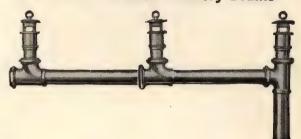
Cast body and nuts.

Inlet to slip 11/4 or 11/2-inch patent overflow plug sink or urinal connection, as specified.

No.	Size Inches	Price Each
478 479	$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	\$7.00 9.00



No. 26 Continuous Lavatory Drains



Size Number of	inches	1½ 2	11/4	11/4	1½ 2	1½ 3	11/2
Price, Rou	gheach	\$4.70	\$7.10	\$9.75	\$6.10	\$9.00	\$12.50
" Fin.		4.85	7.40	10.50	6.30	9.50	13.25
" N F	. "	5 00	7 75				14 00

No. 4469 Nickel-Plated P. O. Plugs

	То		2
Size Inches	To Slip Inches	Price Each	4
$\frac{1\frac{1}{4}}{1\frac{1}{4}}$	$\frac{2}{4}$	\$1.25 1.35	
11/4	6	1.45	
11/4	8	1.55	

Cock Hole Covers

These are made in three sizes; for lavatory cock hole, for sink back cock hole and for overflow hole of bath tub.

Made of brass, polished and nickel-plated.
Price, for Lavatory.....per doz. \$4.20

" Bath and Sink Back " 4.80

" Tub Overflow..... " 10.80



b

No. 754 China Chain Stays

China chain stay with nickelplated ring and post for lavatory.

Price,				each	
46	68	755,	with	Beaded	
Cha	in			each	.45

No. 12446 Chain Stays

Wrought shoulder under flange ½-inch diameter, centering shank in hole on lavatories drilled for Pop-up Basin Waste. Fits enameled iron or vitreous lavatories. Outside diameter of base 1½ inches, length shank under base 1¾ inches. Shank threaded 9–28. Nut tapped 9–28.

Price, No. 12446 per dozen \$4.20





Bead Chains

Solid nickel silver, with jump couplings.

		Length Inches	Price per Doz.
For	Basin	12	\$3.00
66	Bath	17	3.50
"	Wash Tray	11	3.50
"	Closet	48	12.50

Plumbers' Brass Link Chains



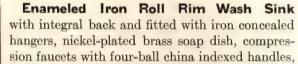


	Style		12 YARDS PER BOX		500 FEET
No.	of Chain	Fin.	N. P.	Fin.	N. P.
000	Plumbers	\$1.25	\$1.30	\$3.50	\$3.60
00	66	1.45	1.50	4.00	4.10
0	44	1.80	1.85	5.00	5.10
1	66	2.25	2.30	6.25	6.35
2	44	2.90	3.00	8.00	8.20
3	Navy Link	3.60	3.70	10.00	10.20
4	u u	4.15	4.25	11.50	11.70

No. 47 E Size O D. Tubing Inches 11/4 11/2

No. 4163 Nickel-plated Brass Flanges

ng es	Diameter Inches	Price per Dozen
,	3	\$3.65
2	3	3.65
	3	3.65



nickel-plated strainer and coupling with tail piece, and $1\frac{1}{2}$ -inch nickel-plated P trap.



Fig. 362

Width over rim 18 inches Width inside 13¼ inches Depth inside 7 inches Back 8 inches

Length	3	4	5	6
Number of Faucets.	2	2	3	3
" Soap Dishes	1	1	2	2
Approximate Shipping Weight pounds	130	170	210	250

These sinks may be furnished without faucets and trap; also with brass patent overflow, and enameled or painted round adjustable pedestals for setting sink 29 to 32 inches from floor.

Enameled Iron Roll Rim Wash Sink with end outlet, on enameled round adjustable pedestals, galvanized double supply supports, galvanized hot and cold supply pipes and crosses over center of sink, nickel-plated rough brass quick acting compression mixing faucets with rose spray spout, oblong soap dishes, 2-inch brass beehive strainer, and 2-inch galvanized iron P trap with male outlet.

Width over rim 30 inches Width inside 26 inches Floor to top of rim 30 inches Depth inside at outlet 8 inches

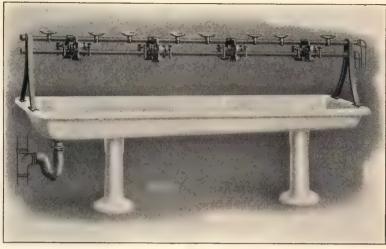
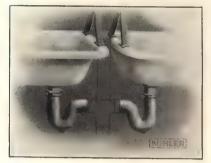


Fig. 371



Length inches Number of Faucets " Soap Dishes Size of Supply Pipes inches	$\frac{48}{4}$ $\frac{4}{34}$	60 6 6 8	$72 \\ 6 \\ 6 \\ 3/4$	84 8 8	96 8 8
Approximate Shipping Weight pounds	315	365	425	490	550

Can be furnished also with supply and strainer only.

Illustration herewith shows sinks end to end joined into one waste and vent.



Type A, Water Supply and Vent from Below Fig. 372



Type A, Overhead Water Supply and Vent from Below Fig. 373



Water and Vent Connection, and Hot and Cold Water Combination Fig. 374

Bradley Washfountains are designed for group washing and are made in five different types to meet every demand and contingency that may arise.

Type C Wallfountain Semi-Circular Fig. 375

The Bradley Washfountain is so constructed that the user cannot wash with hands extending upward. Washing is done in running water with hands downward which prevents waste water from wetting and soiling washroom floors, as it drains into the fountain bowl and does not drip on the floor.

Granito is the least expensive grade and is made of a special waterproof composition, with machined and polished surface on the inside of bowl; outside of bowl and pedestal are

not machined, but are perfectly smooth, of good color and appearance. Granito is as hard as stone and impervious to water, grease, soap, etc.

Marmorite white and colored fountains are machined and polished all over, resembling polished marble. Marmorite is non-absorbent and not affected by action of grease, water, soap, etc.

Porcelain, 32-inch only, in Types A and D. Bowl is made of highest quality glazed porcelair; pedestal of white Mar-

Pedestal for 54-inch fountains has metal protection at top and bottom; for 32-inch fountains, on bottom only.



Type D, Foot-Controlled Fountain Fig. 376

Diameter of Bowlin.	32	54
Approx. Ship. Wt., Granito or Marmoritelbs.	450	1350

Diameter of Bowl.		 	in.	32
Approx. Ship. Wt.,	Porcelain.	 	lbs.	450

Porcelain Roll Rim Pantry Sink with integral back and two integral drain boards, on porcelain legs and supports to wall, fitted with nickel-plated quick compression faucets with china handles, nickel-plated outlet strainer and coupling and nickel-plated 1½-inch trap to wall.

Dimensions

Width over all 22 inches Length over all 50 inches Height of back 9 inches Size of sink proper 20x15 inches Height floor to rim 35 inches



Fig. 381

Prices on porcelain sinks are for kiln-run ware. An extra charge is made for special selection.



Fig. 382

Porcelain Roll Rim Sink with integral back and drain board, on porcelain legs and supports to wall, fitted with nickel-plated quick compression faucets with china handles, nickel-plated outlet strainer and coupling and nickel-plated 1½-inch P trap to wall.

Dimensions

Height of back 9 inches Height floor to rim 35 inches

Size inches	22x42	26x53	26x62
Approximate Shipping Weightpounds	410	600	695

Prices on porcelain sinks are for kiln-run ware. An extra charge is made for special selection.



Fig. 391

Porcelain Roll Rim Kitchen and Rinsing Sink with integral back and center dividing partition, on porcelain legs and supports to wall, fitted with nickel-plated quick compression swing spout faucet with china handles, nickel-plated strainer and coupling, nickel-plated outlet plug and stopper, nickel-plated continuous waste and nickel-plated 1½-inch trap to wall.

Dimensions

Height of back 9 inches Height floor to rim 35 inches

Sizeinches	26x36	26x42	26x48	26x56
Approximate Shipping Weightpounds				

Prices on porcelain sinks are for kiln-run ware. An extra charge is made for special selection.



Fig. 392

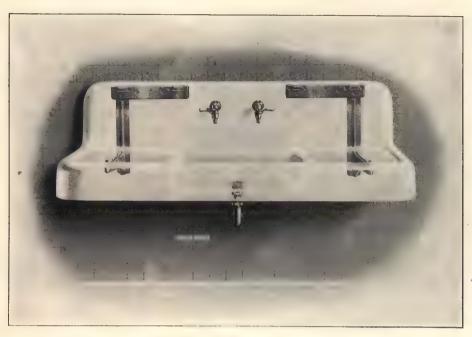
Porcelain Roll Rim Sink with integral back on porcelain legs with painted iron supports to wall, fitted with nickel-plated quick compression faucets with china handles, nickel-plated outlet strainer and coupling and nickel-plated 1½-inch trap to wall.

Dimensions

Height of back 9 inches Height floor to rim 35 inches Depth inside 7 inches Depth outside 9 inches

Sizeinches								
Approximate Shipping Weightpounds	240	260	290	300	320	360	425	500

Prices on porcelain sinks are for kiln-run ware. An extra charge is made for special selection,



Double Drain Board Sink on Concealed Brackets and Hangers

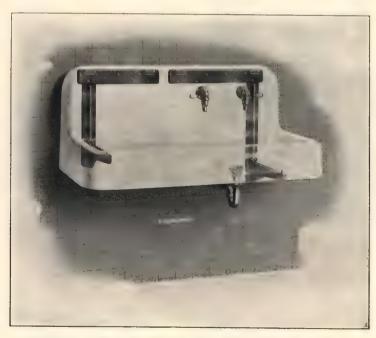
Fig. 401

Kohler Concealed Steel Sink Bracket for use on any of the wall hung kitchen sinks. It is used in combination with the hangers regularly furnished. The use of sink legs is unnecessary, and it leaves the floor free from obstruction.

The bracket is made strong and has full length contact with the wall providing a maximum bearing surface to rigidly and securely support the sink. An adjusting screw located in the front end of the bracket makes contact with sink or drain board. The sink is leveled by turning this screw with either a wrench or a screw driver.

All parts of the bracket are smoothly finished and the adjusting screw does not project below the bottom of the bracket. The bracket is made in two lengths to fit below sink and drain board as illustrated, and is attachable to either end of the regular hanger.

This bracket is furnished with kitchen sinks only when specifically ordered.



Single Drain Board Sink on Concealed Brackets and Hangers Fig. 402

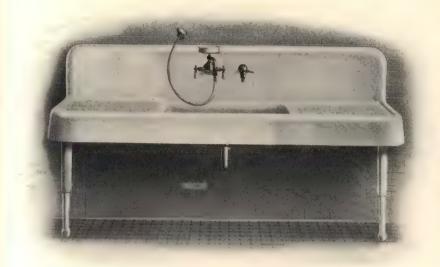


Fig. 411

Enameled One Piece Apron Sink with two drainboards, on enameled adjustable legs and concealed hangers, with ½-inch nickel-plated quick acting compression mixing faucet with hose coupling, hose, spray and hook, china soap dish, ½-inch nickel-plated quick acting compression faucet, and strainer with 1½ inch tailpiece.

Legs are adjustable 30 to 36 inches.

Dimensions

Apron 6 inches Back 12 inches

Size	00.00	00.00	00.00
Drainboards	20x30	22x26	22x30
Drainboards	20x24	22x19	22x24
Length Over All	7414	601/2	7/17
Width " "	1472	0072	1472
A TRY T	$20\frac{1}{4}$	$22\frac{1}{4}$	$22\frac{1}{4}$
Approximate Snipping Weight	435	340	445
Can be furnished with special length legs for sink adjustment from 36 to 41 inches	-00	0.10	110

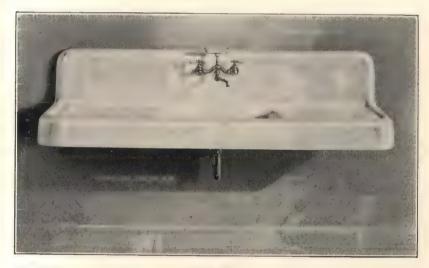


Fig. 412

Enameled Iron Apron Sink with two drain boards and back all in one piece, on concealed wall hangers, nickel-plated quick compression swing spout sink faucet with china lever handles and china soap dish, 1½-inch nickel-plated plain P trap and nickel-plated brass strainer with coupling and tail piece.

Height of back 12 inches Apron 6 inches

Sizeinches	20x30	22x26	22x30
Drain Boards	20x24	22x19	22x24
Length Over All	741/2	601/6	741/2
Width " "	201/4	221/4	221/4
Approximate Shipping Weight	410	330	420

Can be furnished with concealed sink bracket support.

Also can be furnished with painted or enameled iron legs and with special length legs allowing sink adjustment from 36 to 41 inches. Fittings as shown on any of the other sinks can be furnished if desired.

Enameled Iron Apron Sink with left drain board and back all in one piece, on concealed wall hangers, nickel-plated quick compression swing spout sink faucet with china lever handles and china soap dish, 1½-inch nickel-plated plain P trap, nickel-plated brass strainer with coupling and tail piece.

This sink also is made with right drain board.

Can be furnished with concealed sink bracket support.

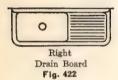
Can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches and special length legs allowing sink adjustment from 36 to 41 inches.

Fittings shown on any of the other sinks can be furnished if desired.

Height of back 12 inches Apron 6 inches



Fig. 421



Sizeinches	9094	0020	0000
Drain Board			
Toward Court All		20x20	
Length Over All	421/2	$48\frac{1}{2}$	521/2
Width " "		201/4	
Approximate Shipping Weightpounds	2074	20%	22/4
ppromise of pping it organically an arrange of the promise of the	210	240	290



Fig. 423

Kitchenette Type Enameled Iron Apron Sink with left drain board and back all in one piece, concealed wall hangers, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated P trap and nickel-plated strainer with coupling and tail piece.

Sink 20x24 inches Drain board 20x20 inches Length over all 42½ inches Width over all 20¼ inches Back 12 inches

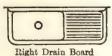
Approximate Shipping Weight..... pounds 210

This sink also is made with right drain board.

Can be furnished with concealed sink bracket support.

Also can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, or special length legs allowing sink adjustment from 36 to 41 inches.

Fittings shown on any of the other sinks can be furnished if desired.



Right Drain Board Fig. 424 Enameled Iron Apron Sink with left drain board, back and left end all in one piece, concealed wall hangers, nickel-plated quick compression swing spout sink faucet with china lever handles and china soap dish, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

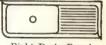
Back 12 inches Apron 6 inches

Size	Drain Board	Length Over All	Width Over All
Inches	Inches	Inches	Inches
20x24	20x20	$42\frac{1}{4}$	$20\frac{1}{4}$
22x30	22x24	$52\frac{1}{4}$	221/4



Fig. 431

Sizeinches		
Approximate Shipping Weight	20x24	22x30
Approximate Shipping Weight	230	290



Right Drain Board Right Corner Fig. 432 This sink also is made with right drain board and right end piece.

Can be furnished with concealed sink bracket support.

Also can be furnished with enameled or painted iron leg adjustable from 30 to 36 inches, and with special length leg allowing sink adjustment from 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired.



Fig. 433

Size				Drain Board	Length Over All
Inches				Inches	Inches
20x24				20x20	$42\frac{1}{4}$
20x30		-	:	20x24	521/4
22x30	,	*		 22x24	$52\frac{1}{4}$

This sink also is made with right drain board and left end piece.

Can be furnished with concealed sink bracket support.

Enameled Iron Apron Sink with left drain board, back and right end all in one piece, concealed wall hangers, nickel-plated quick compression swing spout sink faucet with china lever handles and china soap dish, 1½-inch nickel-plated P trap, nickel-plated brass strainer with coupling and tail piece.

Height of back 12 inches. Apron 6 inches

Sizeinches	20x24	20x30	22x30
Approximate ShippingWeight			
pounds	245	290	300



Also can be furnished with enameled or painted iron leg adjustable from 30 to 36 inches and with special length leg, allowing sink adjustment from 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired."



Fig. 441

Enameled Iron Apron Sink with back all in one piece, concealed wall hanger, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated brass P trap, open nickel-plated brass strainer with coupling and tail piece.

	inches	12 inches	Apron	6 inches
	inches	12 inches		6 inches

Can be furnished with concealed sink bracket support.
Also can be furnished with enameled iron or painted iron legs, adjustable from 30 to 36 inches, and with special legs allowing adjustment of from 36 to 41 inches. Fittings shown on any other sinks can be furnished if desired.

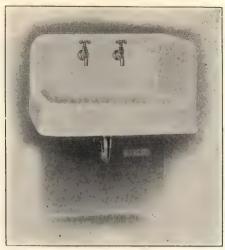


Fig. 443

Enameled Iron Roll Rim Sink with 12-inch back in one piece, concealed wall hanger, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.
16x24	95	20x20	90	20x40	165
18x18	80	20x24	110	22x30	130
18x24	100	20x30	125	22x36	150
18x30	120	20x36	150	22x42	190

Can be furnished on enameled or painted adjustable legs and with fittings shown on any other sinks.



Flg. 442

Enameled Iron Apron Sink with back and right end all in one piece, concealed wall hangers, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

Sink 18x30 inches Sink 20x30 inches	Back 12 inc Back 12 inc		on 6 inches	
Size	Toight	inches	18x30	$\frac{20 \times 30}{180}$

This sink also is made with left end piece.

Can be furnished with concealed sink bracket support.

Also can be furnished with painted or enameled leg, adjustable from 30 to 36 inches, and with special leg allowing adjustment of from 36 to 41 inches. Fittings shown on any other sinks can be furnished if desired.



Fig. 444

Enameled Iron Roll Rim Sink with 12-inch back and right end all in one piece, concealed wall hangers, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated brass P trap, nickel-plated strainer with coupling and tail piece.

Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.
16x24	120	18x36	160	20x40	190
18x24	130	20x30	160	*****	
18x30	140	20x36	175		

This sink also is made with left end.

Can be furnished on enameled or painted adjustable leg and with fittings shown on any other sinks.

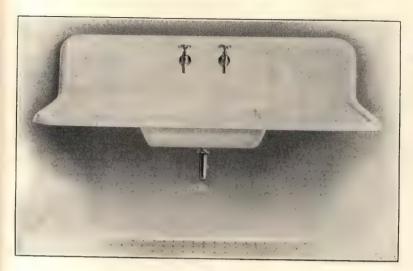


Fig. 451

Enameled Iron Roll Rim Sink with back and right and left drain boards, concealed hangers, nickel-plated compression faucets with four-ball china index handles, nickel-plated strainer and 1½-inch nickel-plated adjustable P trap.

Size 22x26 inches
Drain boards 22x19 inches
Length over all 60 inches
Width over all 22 inches
Back 12 inches

Approximate Shipping Weight.....pounds 280

Can be furnished with concealed sink bracket support.

Can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, and with special length legs allowing sink adjustment from 36 to 41 inches from floor. Fittings shown on any of the other sinks can be furnished if desired.



Enameled Iron Roll Rim Sink with back and left drain board all in one piece, on concealed hangers, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

Height of back 12 inches

Sizeinches	20x24	20x26	20x28
Approx. Ship. Wtlbs.	210	220	230
Sizein.	20x48	20x30	22x30
Approx. Ship. Wtlbs.	235	250	270

	Fig. 452	Length	Width	
Size Inches	Drain Board	Over All	Over All	
	Inches	Inches	Inches	
20x24	20x20	42	20	
20x26	20x18	42	20	
20x28	20x20	. 49	201/2	Right
20x48	20x18	48	20	Drain Board
20x30	20x24	52	20	Fig. 453
22x30	22x24	52	22	
This ciple also is	a made with wight durin board	Can be furnished with concealed sink !	analisat aummont	

This sink also is made with right drain board. Can be furnished with concealed sink bracket support.

Also can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, and with special length legs allowing sink adjustment of 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired.



Enameled Iron Roll Rim Sink with back, right end and left drain board all in one piece, on concealed wall hangers, nickel-plated quick compression swing spout sink faucet with china lever handles and china soap dish, nickel-plated strainer, and 1½-inch P trap.

Height of back 12 inches

Size.....inches 20x24 20x30 22x30 Approx. Ship. Weight. pounds 210 250 265

> Width Over All Inches 20 20 22

Right Drain Board

Left Corner Fig. 462

Fig. 461

Drain	Length
Board	Over All
Inches	Inches
20x20	42
20x24	52
22x24	52
	Board Inches 20x 20 20x 24

This sink also is made with left end piece and right drain board.

Can be furnished with concealed sink bracket support.

Also can be furnished with enameled or painted iron-leg, adjustable from 30 to 36 inches, and with special length leg, allowing sink adjustment from 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired.

Enameled Iron Roll Rim Sink with back, left end piece and left drain board all in one piece, concealed wall hangers, nickel-plated quick compression swing spout faucet with china lever handles and china soap dish, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

Height of back 12 inches

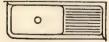
Size Inches	Drain Board Inches	Length Over All Inches	Width Over All Inches
20x24	20x20	42	20
22x30	22x24	52	22



Fig. 463

 Size
 inches
 20x24
 22x30

 Approximate Shipping Weight
 200
 265



Right Drain Board Right Corner Fig. 464 This sink also is made with right end piece and right drain board.

Can be furnished with concealed sink bracket support.

Also can be furnished with enameled or painted iron leg, adjustable 30 to 36 inches, and with special length leg allowing sink adjustment of 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired.

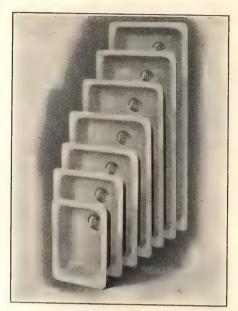


Fig. 471

Enameled Iron Flat Rim Sink with new style nickelplated strainer with lock nut and coupling. Depth 6 inches.

Size	Approx, Shipping	Size	Approx. Shipping	Size	Approx. Shipping
Inches	Wt.,Lbs.	Inches	Wt.,Lbs.	Inches	Wt.,Lbs.
12x18	25	18x30	60	20x36	75
14x20	29	18x36	71	20×40	80
16x24	46	20x24	55	22×36	80
18x24	49	20x30	65	24×48	118
Can be	furnished	with coupling	ng threaded	for 11/4.	11% or
1) in al inar			0	-//	-/2 02

Kohler Enameled Iron Sink Backs

For Flat

Rim Sinks

are regularly

furnished with

two cock holes 8 inches from

center to cen-

Sink backs with only one

hole will be furnished at

ter.

Sink backs



2-inch iron pipe.

Fig. 472

Fig. 4/2				same price.			
Length	inches		24		36		48
Height Price	each	12	12	12	12	12	12

Kohler Enameled Iron Drain Boards



Fig. 473

Enameled iron interchangeable drain board for roll rim sink, with concealed enameled iron bracket.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
16x18	\$4.30	22x18	\$5.40	20x24	\$5.70
18x18	4.70	16x24	5.00	22×24	6.10
20x18	5.00	18x24	5.40		

Adjustable Sink Legs



Iron adjustable sink leg for sink adjustment from 30 to 36 inches.

F-2625 Enameled Iron

Price, No. 1 for Sink Body each \$4.40 2 " Drain Board. ... " 5.00

F-2626 Painted Iron

Price, No. 1 for Sink Body each \$1.90 2.55

Special length for 36 to 41-inch adjustment same price.

Specify when ordering.

Kohler Moulded Rubber Drain Board Mats For Enameled Drain Boards



No. 2418 for Interchangeable Drain Boards

For Drain		For Drain	
Boards	Price	Boards	Price
Inches	Each	Inches	Each
16x18	\$5.60	16x24	\$6.60
18x18	6.00	18x24	7.20
20x18	4.40	20x24	5.80
22x18	4.50	22×24	6.30

No. 2419 for Drain Boards Cast One Piece with Sink

20x18	\$4.50	22x19	\$4.75
20x20	5.60	22x24	6.50
20x24	6.30		

Pump Shelf and Bracket No. 930



Designed for attaching to flat or roll rim sinks for supporting a pump. Can be placed on either side and adjusted to any desired level. Has a bead around the outer and inner edges so all waste

water will drain into the sink. The numerous holes and slots in the shelf make it suitable for fitting different makes of pumps.

Royal Blue pumps take a bracket slightly different. Specify if for Royal Blue pump.

Kitchen Katch-Alls Sanitary Under-The-Sink-Strainer

A sanitary refuse strainer that attaches to the sink trap and swings under the sink. Drop refuse into inner perforated receptacle which allows all water to drain from refuse. No odor, no dirt or dripping water to stain the sink. Lift inner receptacle and dry refuse is ready to wrap. Made of aluminum.



Price.....each \$4.00

Sanitary Sink Frames



Made of 34-inch angle iron which fastens to the wall by clips.

No.	Lgth. In.	Holds S Inches		Price Each	No.	Lgth. In.	Holds Sink Inches	Price Each
2	30	16x30 "	18x30	2.00	5	42	18x36 or 20x36 18x42 " 20x42 18x48 " 20x40	2.25

Plain Sink Brackets



Nickel Silver Sink Strainers



No. 8077





and Enam

\$1.00

1.00

1.25

Brass Sink Connections

12 Inches Long

These couplings are one piece, drawn from heavy gauge wrought brass and nickel-plated.

No. 12405-11/2-inch O. D.

Nickel-plated brass 11/2-inch O. D. sink coupling 12 inches long with shoulder.

Price, No. 12405.....each \$1.50

No. 12425-11/4-inch O. D.

Nickel-plated brass 11/2x11/4-inch O. D. Sink coupling 12 inches long with shoulder.

Price, No. 12425.....each \$1.75

No. 409 Brass Sink Connections

Slip inches Gauge No.	22	$\frac{1\frac{1}{2}x5}{22}$
Price, No. 409, Nickel-plated each	\$.90	.90

No. 500 Adjustable Sink P Traps



Female I. P. outlet.

Size ... inches 1½ 1½ 2 Price, N. P. each \$3.00 3.75 7.00 N. P. Dull ... " \$2.75 3.50 6.50

No. 2402 Brass Sink Strainers For Iron Pipe Connection

Nickel-plated brass sink strainer with iron coupling threaded 1½-inch I. P. Also furnished for 11/4 and 2-inch I. P. Price, Open Strainer..... with Rubber Stopper for Common Overfloweach Price, Patent Overflow with Rubber Stopper..... each 2.60



No. 2396 Brass Sink Strainers For Lead Pipe Connection



Nickel-plated brass sink strainer with iron coupling and collar for lead

pipe connection.

Price, Open Strainer each \$1.10

" with Rubber Stopper for Common Overflow each Price, Patent Overflow with Rubber Stopper.....each 2.85

No. 4416 Sink Strainers with Plugs

Price.	Paintedper doz.	\$3.50	A
66	Enameled"	5.00	P
66	Polished Brass "	7.00	
44	N. P. Brass "	8.00	13
66	Ex. Bolts and Nuts "	.50	-



No. 4415 Open Sink Strainers



Price	, Paintedpe	r doz.	\$1.25
66	Enameled	46	2.25
66	Polished Brass	66	3.75
66	N. P. Brass	66	4.00
65	Ex. Bolts and Nuts	44	.50



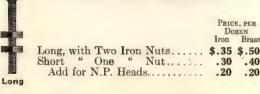
Sink Collars No. 450 for Lead Pipe PRICE, PER DOZEN Ptd. Galv \$1.50 \$2.00



11/4 11/2 1.50 2.00 No. 452 for Iron Pipe

.....inches Size... Price, Painted......per doz. \$3.00 \$3.00 \$6.00 4.00 Galvanized 4.00 4.00 8.00

No. 4420 Sink Bolts





.40

.20

No. 525 Dececo All White Combination Sink Faucets

Dececo all white china combination sink faucet with concealed compression valves, china housings, china index handles and china spout.



Price, No. 525, with 1/2-Inch Valves, 8 Inches Center	
to Center, for Enameled Sink each Price, No. 525, with ½-Inch Valves, 8 or 12 Inches	\$16.75
Center to Center, for Porcelain Sinkeach	22.50
Add for 34-Inch Valves, for Porcelain Sinkeach	2.50

Whitehouse Quick Compression Double Sink Faucets



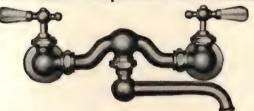
Fig. 491

Double sink faucet with concealed quick compression valves, vitreous china housing swing spout and indexed china lever handles and integral soap dish with invisible drain.

12-inch iron pipe connections, 8 inches center to center.

Price.....each

No. 60 Quick Compression Sink Faucets

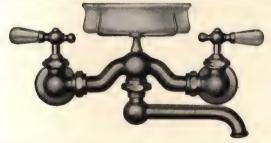


Nickel-plated quick compression combination double sink faucet with swing spout, china lever handles indexed and solid female flanges for ½-inch iron pipe.

Price, No. 60, Nickel-plated each \$12.50

If with Hose End Add "150

No. 60S Quick Compression Sink Faucets



Nickel-plated quick compression combination double sink faucet with swing spout, china handles indexed, china soap dish and solid female flanges for ½-inch iron pipe.

Price, No. 60S, Nickel-plated each \$17.00

If with Hose End, Add 1.50

No. Q-61-S Quick Compression Triple
Supply Sink Faucets



Nickel-plated quick compression triple supply sink faucet with swing spout, china soap dish, china handles, marked hot, cold and city or drink and ½-inch solid female flanges, 4-inch centers, adjustable.

Price.	No.	Q-61-S.	with Soap	Dish	 each	\$16.00
44	44	O-61-P.	without So	Dish ap Dish	 44	14.50

No. C-101 Quaturn Classic Sink Faucets Without Soap Dish

Quaturn Classic sink faucet with china indexed handles and swing spout.

Connections ½ or ¾-inch iron pipe female.



Price.	For	Cock	Hole	s 8	-inch	Center	to	Center	.each	\$10.00 10.50
44	44	- 64	46	10	66	. 44	66	44	. 66 .	10.50
66	66	66	44	19	44	66	16	44	44	11.00

No. C-201 Quaturn Classic Sink Faucets With Soap Dish



Quaturn Classic sink faucet with china soap dish, and china indexed handles and swing spout.

Price.	for	Faucet	Holes	8-	inch	Center	to	Center	.each	\$12.50 13.00
4	64	44	66	10	44	"	66	66	. 66	13.00
66	66	. "	а	12	44	44	66	£	· u	13.50

No. C-301 Quaturn Classic Sink Faucets With Soap Dish and Spray



Nickel-plated classic sink faucet with swinging spout, adjustable arms for ½ or ¾-inch iron pipe female, china handles, china soap dish with drain, rubber tubing and spray.

Water is diverted from spout through spray by turning knob below spout.

Price.	4	to	83/8	Inches	Ι.			er.			. 4			 	.each	\$20.00 20.50
"	4	66	103/2	"											. "	20.50
66	4	66	123/8												. "	21.00



Porcelain Slop Sink with integral back on enameled inside and painted outside iron trap standard with floor outlet for lead pipe, nickel-plated brass cleanout screw, enam-eled iron adjustable plate with bolts, nickel-plated strainer and nickel-plated quick compression faucets with china handles handles.

Depth inside 12 inches Back 12 inches Size.... 22x24275

Prices on porcelain slop sinks are based on kiln-run ware. An extra charge is made for special selection.



Fig. 502

Enameled Iron Roll Rim Slop Sink with 14-inch enameled back in one piece, enameled adjustable trap standard with brass inlet flange, nickel-plated brass strainer, cleanout plug and nickel-plated compression faucets with china indexes.

Size.....inches 16x20x12 18x22x12 20x24x12 Approx. Shipping Wt., lbs. 145 165 180

Can be furnished with other style trap standards. . Also can be furnished in galvanized iron.



Fla. 503

Enameled Iron Flat Rim Slop Sink with 12-inch separate back, on enameled adjustable trap standard with outlet threaded for 2-inch iron pipe, nickel-plated brass cleanout plug, strainer and flange and nickel-plated compression faucets, with 4-ball china index handles. Furnished enameled inside only. Size.....inches 16x20x12 18x22x12 20x24x12 App. Shipping Weight. lbs. 120 150

Can be furnished with other style trap standards.



Fig. 504

Enameled Iron Flat Rim Slop Sink with nickel-plated open brass strainer with iron coupling and collar for lead pipe connection. Enameled inside only.

Size.....inches 16x16x10 16x20x12 Approximate Shipping Weight . pounds 18x22x1220x24x12 Approximate Shipping Weight pounds

The 16x16x10-inch has center outlet only. The 20x24x12inch can be furnished with either center or end outlet. The balance have end outlet only. Strainer can be furnished with coupling threaded for 11/4, 11/2 or 2-inch iron pipe.

Enameled Iron Slop Sink Trap Standards



Plain trap slop sink standard for lead pipe, with nickelplated cleanout plug.

Price,	Enameled	All	
Over			
	Enameled		
side	Only		

Can be furnished also with nickel-plated vent to wall.

Enameled Iron Slop Sink Trap Standards

Open trap slop sink standard for lead pipe, with nickelplated cleanout plug.

Price,	Enameled	All	
Over			
	Enameled		
side	Only		

Can be furnished with hub vent or nickel-plated brass vent.



Fig. 512



Fig. 515

Enameled Iron Slop Sink Trap Standards



Fig. 513

Open trap slop sink standard for 3-inch soil pipe, with nickel-plated cleanout plug.

Price,	Enameled	All	
Ove	r		
	Enameled		
side	Only		

Can be furnished with hub or nickel-plated brass vent.

Enameled Iron Slop Sink Trap Standards

Adjustable slop sink trap standard threaded for 2-inch iron pipe, with nickel-plated cleanout plug.

Price, Enameled	
All Over	
Price, Enameled	
Inside Only	

Also can be furnished with outlet threaded for 3-inch iron pipe.



Fig. 514

Enameled Iron One-piece Apron Laundry Tray and Sink Combination on enameled adjustable legs and concealed hangers, with ash combination drain board and tray cover, nickel-plated quick compression double sink faucet with swing spout, china lever handles and china soap dish. 1½-inch continuous drain pipe and nickel-plated 1½-inch P trap, strainer with 1½-inch special length tailpiece in sink and strainer with stopper and 1½-inch tailpiece in tray.

Also can be furnished with enameled legs and integral patent overflow or drilled for overflow.

Width outside 23¾ inches
Front to back inside 19¼ inches
Length each compartment inside 21¾ inches
Depth sink inside 6 inches
Depth tray inside 13¼ inches
Height of back 12 inches
Apron 6 inches
Floor to top of rim adjustable from 32 to 36 inches.



Sink at Left Fig. 516

Length Over All	inches .pounds	5

The drain board is interchangeable for use over sink or tray or may be removed entirely. Tray overflows into sink over a depression in partition.

Porcelain Roll Rim Laundry Trays with integral back on porcelain legs and straps to wall, fitted with nickel-plated quick compression faucets with china handles, nickel-plated drain outlet plugs and stoppers, nickel-plated continuous drain, nickel-plated 1½-inch trap to wall and heavy wood wringer base.



Fig. 521

Dimensions

Height of back 6 inches Height floor to rim 34 inches

 Size
 inches
 26x26
 26x30
 26x36

 Approximate Shipping Weight, Each Tray
 pounds
 280
 345
 385

Prices on porcelain trays are for kiln-run ware. An extra charge is made for special selection.

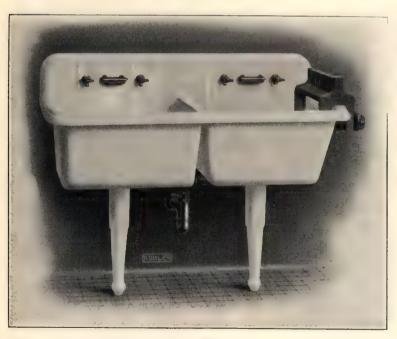


Fig. 522

Enameled One Piece Roll Rim Double Laundry Tray on painted adjustable legs, fitted with wooden wringer holder, nickel-plated brass soap dishes, ½-inch compression faucets, 1½-inch special double waste connection and strainers with rubber stoppers, and 1½-inch P trap.

Length over rim 52¾ inches
Length each tray inside 23 inches
Width over rim 26⅓ inches
Height of back 8 inches
Front to back inside 21¼ inches
Depth inside 14¼ inches

Approximate Shipping Weight.....pounds 485

Height from floor to top of rim is adjustable from 33 to 37 inches. If wanted drilled for overflow, specify when ordering.

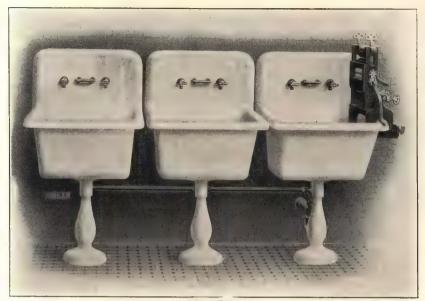


Fig. 531

Enameled Iron Roll Rim Laundry Trays with integral backs, adjustable pedestals, nickel-plated soap dishes, wooden wringer holder, compression wash tray faucets, 1½-inch continuous drain, 11/2-inch waste plugs and 2-inch P trap.

Length over rim 271/2 inches Length inside 223/4 inches Depth inside 141/4 inches Front to back over rim 2634 inches Front to back inside 221/2 inches Back 14 inches

Height from floor to top of rim is adjustable from 34 to 36½ inches.

Furnished enameled all over or enameled inside only.



Fig. 532

Can be furnished drilled for connected drain and overflow.

Enameled Iron Flat Rim Laundry Trays, painted iron adjustable standards and concealed hangers, nickel-plated brass soap dishes, wood wringer holder, 1/2-inch nickel-plated compression wash tray faucets, 1½inch nickel-plated brass continuous drain and 2-inch nickel-plated P trap, drain plugs and rubber stoppers.

Front to back over rim 26 inches Front to back inside 2134 inches Length over rim 26 inches Length inside 23 inches Depth inside 141/4 inches Height of trays adjustable from 301/2 to 351/2 inches from floor to top of rim

One- Two- Three-section section

Approximate Shipping Weight Less Waste, Faucets, Trap and Wringer Holder.....pounds 175 350 525

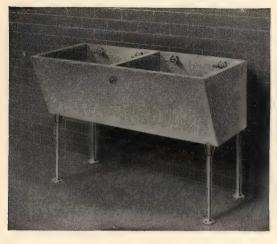


Fig. 541

Alberene Stone Laundry Tray without back, drilled for drain connection and faucets, supported on new style legs, fitted with finished brass drain plugs and stoppers.

Width outside 24 inches Depth outside 16 inches

This tray can be drilled for center, right or left-hand drain connection. Also furnished without faucet drillings if desired.

Faucets and drain connections are extra.

The two-part tray can be furnished in 42, 44 and 46-inch lengths for use in small apartments. The two-part tray also can be furnished with twin drain connection with or without internal overflow as specified.

1-Part			
Lengthinches	24	30	36
Approximate Shipping Weightpounds	239	265	325
2-Part			
Lengthinches	48	54	60
Approximate Shipping Weightpounds	455	484	530
3-Part			
Lengthinches 72	78	84	90
Approximate Shipping Weightpounds 665	710	790	815

Alberene Stone Laundry Tray with back, drilled for drain connection and faucets supported on new style legs, fitted with finished brass drain plugs and stoppers.

Width outside 24 inches Depth outside 16 inches

This tray can be drilled for right or left-hand drain connection.

The two-part tray can be furnished with twin drain connection with or without internal overflow as specified.

Faucets and drain connections are extra.



Fig. 542 Approximate Shipping Weight with 12-inch Back. pounds Approximate Shipping Weight with 6-inch Back. 16 "



Granitine Laundry Tray, integrally cast in one piece, with metallic rim and wringer guards, brass strainers, rubber plugs and supported on painted steel frame.

Twin drain connection is furnished for two-part tray.
All trays have faucet holes partly drilled.

The Ajax trays are of a gray color while the Princess trays are white.

No.	No. of Comp	Length In.	Width In.	Depth In.	Weight Pounds	Parci Ajax	EACH
2	1	24	24	16	175		Princess
3	ī	$\tilde{2}\tilde{7}$	24	16	200	\$13.00 14.00	
4	ī	31	24	16	225	15.00	
6	2	48	24	16	350	20.00	\$28.00
7	2	54	24	16	375	23.00	31.00
8	2	60	24	16	400	26.00	34.00
10	3	72	24	16	. 550	32.00	45.00

Faucets and steel frame extra.



Granitine Laundry Tray, integrally cast in one piece, with metallic rim and wringer guards, brass strainers, rubber plugs and supported on painted steel frame.

Twin drain connection is furnished for two-part trays.

All trays have faucet holes partly drilled. Ajax trays are of a gray color while the Princess are white.

No.	No. of	Length	Width	Depth	Weight	PRICE	, EACH
	Comp.	In.	In.	In.	Pounds	Ajax	Princess
102	1	25	24	16	175	\$15.50	
103	1	27	24	16	200	17.00	
104	1	31	24	16	225	19.00	
106	2	48	24	16	400	28.00	\$40.00
107	2	54	24	16.	425	33.00	43.00
108	2	60	24	16	450	38.00	46.00
110	3	72	24	16	600	44.00	66.00

Faucets and steel frames extra.

No. 70 Quick Compression Double Laundry Tray Faucets



Quick-opening compression double laundry tray faucet with female unions for ½-inch iron pipe, hose end swing spout, and adjustable clamps.

Body rough brass, plated all over.
Price, No. 70, for 2-Part Tray....each \$5.40

No. 30 Compression Wash Tray Faucets Short Pattern

Sizeinches	1/2
Price, Finished	
n each	\$1.55
Price, N. P	1.85
Add for Female Thread	15
Add for Hose End	. 13
each	25
· · · · · · · · · · · · · · · · · · ·	. 40



No. 3571 Compression Sediment Faucets



Male for Iron Pipe

PRICE	EACH -
Rough	Add for
Nickel-	Loose Key
plated	Handles
\$1.45	\$.50
1.90	.50

Wessels Laundry Tray Frames



	Lgth.	Width	Ht.	Wt.	Price		Loth	Width	Ht	Wt.	Price	
No.	Ĭn.	In.	In.	Lbs.	Each	No.	In.	In.	In.	Lbs.	Each	
2	24	15	18	111/	\$2.00	107	46	17	18	1614	\$2.50	
102					2.00		50	15	10	10/2		
						8				18	2.75	
				14	2.00	108	52	17	18	$18\frac{1}{2}$	2.75	
106	40	17	18	14	2.00	10	64	15	18	21	3.00	
7	46	15	18	16	2 50						3.00	

No. 104 Twin Drain Connections



The twin drain connection is furnished with two-part trays so that only one drain connection or trap is required. May be furnished with or without internal overflow.

Price, with Overfloweach \$3.50 Price, without Overflow.....each 3.00

No. 182 Soap Dishes for Alberene Trays



Price,	Galvanized Irone	ach :	\$.65
66	Nickel-plated Spun Brass for Enamel Trays.	"	1.00

No. 912 Continuous Laundry Tray Drains



Inlets not to exceed 271/2 inches center to center.

		Price	E, EACH		P	PRICE	EACH
Size	No.	Rough	Fin. or	Size	No.	Rough	Fin. or
In.	Parts	Brass	N.P.	In.	Parts	Brass	N.P.
$\frac{11/2}{11/2}$	2	\$2.85	\$3.60	11/2	4	\$5.45	\$6.20
117	3	4.15	4.90	- /2	_	40.10	40.20

Laundry Tray Plugs

For Alberene Laundry Trays





No. 181

Price, No. 181 Laundry Tray Plug with Locknut and Coupling.....each
Price, No. 180 Laundry Tray Plug with Bolts... 4. 7.

No. 100 Galvanized Adjustable Sink Traps



Tight joints. Universal in adjustment. Galvanized cast iron body. Nickel-plated brass slip joint nut and coupling nut. Brass trap screw.

Price, 11/2-inch Iron Pipe, 11/2-inch Slip Joint Nut. each \$2.50

No. 66 Cast Iron Traps





Fig. 561

Heavy Vitreous China Pedestal Drinking Fountain with receptor, nickel-plated brass strainer, cast brass supply and waste connection, nickel-plated self-closing stop with loose key volume regulator at side of pedestal, floor screws with nickel-plated cap nuts, two-stream mound building projector and automatic stream control.

Receptor 10x13 inches Height to top of pedestal 30 or 36 inches Depth of receptor inside 3½ inches Diameter of pedestal at floor 15 inches

Height ... inches 30 36 Approximate Shipping Weight ... pounds 85 95



Fig. 562

No. 605 Heavy Vitreous China Wall Drinking Fountair with integral trap housing, concealed wall hanger, nickel plated brass strainer and wall bolts, self-closing stop with cross handle, loose key stop and union for 3%-inch supply, rough brass trap for 1¼-inch iron pipe, two-stream mound building projector and automatic stream control.

Receptor 10x13 inches
Width over all 13 inches
Wall to drinking stream 8 inches
Wall to front of fountain 13 inches
Approximate Shipping Weight......pounds 50



The converging of the 2 streams of water sets up an interference in the stream, retarding the movement of the water at the apex of the arc, making it impractical to drink from any other point. Can be furnished with bypass valve, for continuous flow of water.



No. 611 Heavy Vitreous China Wall Drinking Fountain with integral back and concealed hangers, two-stream moundbuilding projector and Taylor automatic stream control, self-closing stops with 4-ball china indexed handles, loose key volume regulators and 3/8-inch nickel-plated iron pipe supply, nickel-plated self-closing glass filler through back, 11/4-inch nickel-plated brass trap and nickel-plated brass strainer.

Length over all 24 inches
Wall to front of fountain 13 inches
Wall to drinking stream 8 inches
Depth of receptor, 3½ inches
Height of back 10½ inches

Approximate Shipping Weight.....pounds 75



Fig. 571

Delavan Enameled Iron One-piece Drinking Fountain with flat back, on concealed hanger, complete with china non-squirting bubbler with nickel-plated brass arm, flow regulator and push button valve with china index, 1½-inch P trap and open strainer.



No. 542 Wall Fountain with heavy vitreous china bowl mounted on cast iron bracket to wall, nickel plated brass strainer, 3¾-inch nickel-plated guard ring, self-closing stop, loose key volume regulator; furnished with 4-stream angle jet projector. Finished in baked grey enamel.

Approximate Shipping Weight..... pounds 20



No. 617

Nos. 617 and 618 Pedestal Drinking Fountain with heavy vitreous china receptor, nickelplated brass strainer, 2½-inch O. D. steel tubing standard and cast iron closed base, nickelplated self-closing stop, loose key volume regulator, two-stream mound building projector and automatic stream control, 3%-inch iron pipe supply and 1-inch iron pipe waste.

Receptor, 7½x10 inches Depth of Receptor, 3 inches Base, 9½ inches

Height inches Approximate Shipping Weight .. lbs. 50



No. 547 Halsey Taylor Pedestal Drinking Fountains

Heavy vitreous china receptor with No. 509 fountain head with four stream angle jet projector, 3%-inch guard ring, self-closing lever handle valve, loose key volume regulator, 2½-inch outside diameter steel tubing standard with closed iron base, ¾-inch galvanized supply and 1-inch galvanized waste pipes concealed in standard.

Diameter of receptor, $9\frac{1}{2}$ inches. Diameter of base, $9\frac{1}{2}$ inches.

Height.		inches	36	39
Approx	Shipping	Wt. lbs	45	52





Water Coolers with Bubbler No. 800

39 50

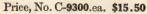
This cooler is designed to connect to pressure lines. The drinking water does not come in contact with either the ice or the melted ice water, but is circulated through a brass coil which is tinned inside and outside. The cover, top and base are made of cast iron. The body, tank and coil guard are made of galvanized sheet iron. Insulation is cork in the side walls and cork board in the bottom and cover.

Bowl with side stream bubbler and automatic stream control.

Height of chamber 19 inches
Diameter outside 19 inches
Shipping weight pounds
Price, No. 800 each \$72.00

No. C-9300 Drinking Fountain Bubblers

N. P. combination bubbler and faucet with lever handle self-closing valves swinging bubbling cup with concealed regulating screw and china nozzle.





No. C-9700 Drinking Fountain Bubblers



Nickel-plated brass combina-tion bubbler and basin faucet with lever handle self-closing valve, swinging bubbling cup with concealed regulating screw and china nozzle.

Price, No. C-9700. ea. \$17.50

When arm is brought forward in alignment with faucet, the water flows through the china bubbler, and when bubbler arm is turned to either side. water flows through faucet only.

Type 29 China Self-closing Bubbling Heads



China straight stream bubbling head with nickel-plated supply arm and push button, self-closing stop and threaded 3/8-inch iron pipe.

Price, Type 29each \$7.00 can be furnished with by-pass at \$1.50 extra. Furnished

for slant stream at 25 cents extra.



No. 8800 Cafeteria Glass Fillers

Nickel-plated brass self-closing cafeteria glass filler with rigid spout and regulating screw. Connection for ½-inch iron pipe female.

Price, No. 8800. each \$10.00

Type L Brass Bubbling Heads



A rough brass, nickel-plated bubbling head with volume regulator, threaded ½-inch male iron pipe.

Price, Type L..... each \$1.80

Self-closing Bubbling Heads



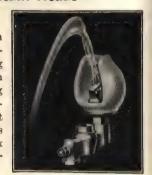


Nickel-plated brass lever handle ball bearing self-closing stop and bubbling head.

Price, Type E with N. P. Brass Bubbling Head. each \$5.80 7.55

No. 564 Fountain Heads

Made from vitreous china with nickel-plated brass base and projector. Has 2-stream converging side stream projector which produces a practical drinking mound at highest point of projection. An interference is set up in the stream which retards the movement of water at apex of arc-stream automatic controlled.



Price, No. 564.. Add for Flanged Tail Piece and Locknut each \$10.00

China Bubbling Heads



Type 26

Price, Type 26, Straight Stream, Threaded 4-inch Iron Pipe . . . each \$3.00

Price, Type 27, Straight Stream, Volume Regu-lator, 3/8-inch iron pipe



..... each 4.40 Type D Drinking Fountain **Bubblers**



Nickel-plated cast brass bubbling head with volume regulator.

Price, Type D.....each \$3.75

Type J Drinking Fountain Bubblers



China bubbling head with volume regulator.

Price, Type J.....each \$5.50



Fig. 591

Syphon Jet Closet Combination with vitreous china silent syphon jet bowl with floor outlet, white celluloid covered seat and cover with white hinges, vitreous china straight front tank with top-side lever, china handle and escutcheon, elevated high pressure float valve with copper float, rubber ball flush valve, nickel-plated supply pipe to wall with china handle stop and china escutcheon, 2-inch nickel-plated flush connection, vitreous china flush pipe cover, tank screws, floor screws and china caps.



Fig. 592

Syphon Jet Closet Combination with vitreous china silent syphon jet bowl with extended front lip, floor outlet and top inlet, white celluloid covered open front seat with cover and white hinges, vitreous straight front tank with rubber ball flush valve, top-side lever with china handle, elevated high pressure float valve with copper float, nickel-plated supply pipe to wall with china handle stop and china escutcheon, 2-inch brass flush connection, vitreous china flush pipe cover, tank screws, floor screws and china caps.

Height, 15 inches; opening of bowl, 10x12 inches; water surface, 9x11 inches; water seal, 3 inches.

Approximate Shipping Weight.....pounds 175



Fig. 593

Syphon Jet Closet Combination with vitreous china syphon jet bowl with floor outlet and top inlet, white celluloid covered seat and cover with nickel-plated brass bar hinge, vitreous china straight front tank with top-side lever with china handle, rubber ball flush valve, high pressure float valve with copper float, nickel-plated supply pipe to wall with china handle stop valve and china escutcheon, 2-inch brass flush connection, vitreous china flush pipe cover, tank screws, floor screws and china caps.

screws, floor screws and china caps.

Height, 15 inches; opening of bowl, 10x12 inches; water surface, 9x10 inches; water seal, 3 inches.

Approximate Shipping Weight......pounds 150



Syphon Jet Closet Combination with vitreous china syphon jet bowl with extended front lip, floor outlet and top inlet, white celluloid covered open front seat with cover, nickel-plated brass bar hinge, vitreous china straight front tank with rubber ball flush valve, top-side lever with china handle, high pressure float valve with copper float, nickel-plated supply pipe to wall with china handle stop and china escutcheon, 2-inch nickel-plated brass flush connection, vitreous china flush pipe cover, tank screws, floor screws and china caps.

Height, 15 inches; opening of bowl, 10x14 inches; water surface, 9x11 inches; water seal, 3 inches.

Approximate Shipping Weight.....pounds 154



Fig. 601

Reverse Trap Closet Combination with vitreous china reverse trap syphon action bowl with floor outlet and back inlet with 2-inch brass spud, white celluloid covered seat and cover with nickel-plated brass bar hinge, white vitreous china straight front tank with rubber ball flush valve, topside lever with china handle, high pressure float valve with copper float, nickel-plated supply pipe to wall with china handle stop valve and china escutcheon, 2-inch nickel-plated flush connection, tank screws, floor screws and china caps.



Fig. 602

Reverse Trap Syphon Combination with vitreous china reverse trap syphon action bowl with floor outlet and back inlet with 2-inch brass spud, mahogany finished seat and cover with heavy nickel-plated brass bar hinge, white vitreous china straight front tank with rubber ball flush valve, topside lever with china handle, high pressure float valve with copper float, nickel-plated supply pipe to floor with escutcheon, nickel-plated flush connection, tank screws, floor screws and china bolt caps.

Height of bowl, 15 inches; opening of bowl, 10x12 inches; water surface, 9½x10½ inches; water seal, 3 inches.

Approximate Shipping Weight.....pounds 135



Fig. 603

Syphon Washdown Closet Combination with vitreous china syphon washdown bowl with floor outlet, white celluloid covered seat and cover with concealed bar hinge, vitreous china straight front tank with rubber ball flush valve, top-side lever with china handle and escutcheon, high pressure float valve with copper float, nickel-plated supply pipe to wall with china handle stop valve and china escutcheon, nickel-plated brass flush connection, tank screws, floor screws and china bolt caps.



Fig. 604

Syphon Washdown Closet Combination with vitreous china syphon washdown bowl with floor outlet, mahogany finish seat and cover with concealed bar hinge, vitreous china straight front tank with rubber ball flush valve, topside lever with china handle, high pressure float valve with copper float, nickel-plated supply pipe to floor, nickel-plated brass elbow flush connection, tank screws, floor screws and china bolt caps.



Fig. 611

Syphon Wash Down Closet Combination with vitreous china syphon wash down bowl with extended lip and floor outlet, mahogany finish open front seat and cover with concealed bar hinge, vitreous china straight front tank with rubber ball flush valve, top lever china handle, high pressure float valve with copper float, nickel-plated supply pipe to floor, nickel-plated brass elbow flush connection, tank screws, floor screws and china caps.

Height of bowl, 15 inches; opening of bowl, 10x12 inches; water surface, 8x9 inches.

Approximate Shipping Weight.....pounds 127



Fig. 612

Vitreous China Bidet with integral overflow, separate combination supply fittings to both rim and bidet with compression valves with four arm china handles and china escutcheons, pop-up drain with china knob, nickel-plated supply pipes with straight stops and china escutcheons.

Height 16 inches Width 15 inches Length over all 23 inches

Approx. Shipping Weight.....pounds 100



Fig. 613

Madevine Durock Vitreous China Wall Blow-Out Pattern Closet with wall outlet, extended front lip and top inlet, 1½ or 1½-inch brass spud, mahogany finished open front seat, no cover, with heavy nickel-plated brass bar hinge and nickel-plated brass flush valve with china oscillating handle, loose key angle stop and seat bumper.

Approximate Shipping Weight.....pounds 107

Opening of bowl 11x15 inches, water surface 10x13 inches and 3-inch water seal.



Fig. 614

Syphon Jet Closet Combination with vitreous china syphon jet bowl with extended lip and top supply, birch mahogany finish extended open front and back seat with nickel-plated bar hinge, nickel-plated Royal flush valve with side inlet, 1-inch ground joint union angle stop, china oscillating handle, 1½-inch nickel-plated flush connections, nickel-plated brass wall and spud flanges, wall seat bumpers and china bolt caps.

Approximate Shipping Weightpounds 115



Fig. 621

Reverse Trap Closet Combination with vitreous china reverse trap bowl, golden oak or birch mahogany seat with cover and nickel-plated cast brass hinges, nickel-plated Royal flush valve with oscillating china handle, and side supply inlet, seat bumper on valve, 1-inch wheel handle angle stop with union, 1½-inch O. D. elbow flush connection, and brass floor flange, bolts and washers and china bolt caps.

Approximate Shipping Weight.....pounds 80

Can be furnished without cover on seat or with white celluloid covered seat and cover.



Fig. 622

Syphon Wash Down Closet Combination, vitreous china syphon wash down bowl, golden oak or birch mahogany seat with cover and nickel-plated cast brass hinges, nickel-plated Royal flush valve with oscillating china handle, side supply inlet, 1-inch angle stop, bumper on valve for seat with cover, brass floor flange, bolts and washers.

Approximate Shipping Weight pounds 80

Can be furnished without cover on seat; also with white celluloid covered seat and cover; with straight stop; also with jet in bowl.

Royal Flush Valves



Top View

These are the only valves that flush the same amount of water at each operation regardless of whether handle or button is held or released, thus preventing either an excessive or insufficient flush.

They can be used on either direct or tank supply and do not require regulating for any variation in pressure.

The oscillating handle is the best method of operating flush valves ever devised, as a slight movement in any direction causes the valve to flush.

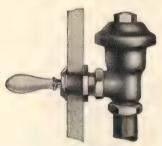
The top view shows regular inlet at B, but the valve can be furnished with inlet at A or C when so ordered.



No. F50-AD

Price, No. F50, with China Handle and Straight Stop. .ea. \$23.00

Price, No. F50-AD, with China Handle and Angle Stop.ea. \$23.00



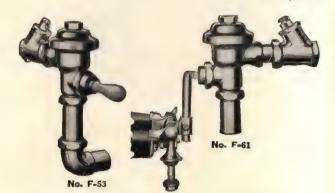
No. F55 Concealed Type

Price, No. F55 with China Handle or Push Button and Straight Stop. .ea. \$26.00



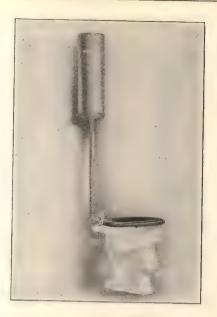
. Side View

Price, No. F52-CD, with Push Button and Angle Stop and Outlet 21 In. Long each \$24.50



Price, No. F53, with China Handle, and Straight each \$24.50

Price, No. F61, Seat Operated with Straight Stop, Check Hinge and Open Front and Back Whalebonite Seateach 55.00



No. 9 Vogel Automatic Syphon Action Closet Combination, with vitreous china syphon action bowl, heavy golden oak seat with nickel-plated brass hinges, galvanized iron pressure tank, nickel-plated automatic seat-acting flush valve and galvanized flush pipe.

Approximate Shipping Weight.....pounds 100

Can be furnished with syphon jet bowl, extended lip, enameled tank or nickel-plated flush pipe and fittings.



No. 1 Vogel Automatic Enameled Iron Hopper Combination, tall oval enameled inside iron roll flush rim hopper with reenforced hardwood seat, 8x24-inch galvanized pressure tank, supply and flush valves, 39-inch valve rod and casing.

Approximate Shipping Weightpounds 100

Can be furnished with hopper and spigot outlet, enameled inside and out, with earthenware bowl, or with self-raising seat.

The bowls have special design, one-half roll enameled rims.

This closet combination is simple, strong and durable, and requires no pit.

It is quickly and economically installed, as the valve may be covered with earth as soon as connection with the water supply is made. The valve parts can be easily removed from above the floor.

Syphon Jet Closet Bowls



Vitreous china syphon jet closet bowl with floor outlet, top inlet and 1¼, 1½ or 2-inch brass spud.

Height, 15 inches; opening of bowl, 10x12 inches; water surface, 9x10 inches; 3-inch water seal.

Price....Fig. 631

Syphon Jet Closet Bowls

Vitreous china syphon jet closet bowl with extended front lip, floor outlet, top inlet and 1¼, 1½ or 2-inch brass spud.

Height, 15 inches; opening of bowl, 10x14 inches; water surface, 9x11 inches; 3-inch water seal.



Fig. 632

Price.....Reverse Trap Closet Bowls



Vitreous china reverse trap closet bowl with jet, floor outlet, back inlet and 1½, 1½ or 2-inch brass spud.

..... each \$26.00

Height, 15 inches; opening of bowl, 10x12 inches; water surface, 91/4x101/4 inches; 3-inch water seal.

Fig. 633

Price.....each \$16.00

Syphon Wash Down Closet Bowls

Vitreous china syphon action wash down closet bowl with jet, floor outlet, back inlet and 1¼, 1½ or 2-inch brass spud.

Height, 15 inches; opening of bowl, 10x12 inches; water surface, 8x9 inches; 234-inch water seal.



Fla 634

Price.....each \$14.00

Vitreous China Low Tanks



Fig. 641

Vitreous china straight front low tank with china handle top-side lever, elevated float valve with copper float, rubber ball flush valve, nickel-plated supply pipe to floor and 2-inch nickel-plated flush connection and tank screws.

Price, 7-Gallon...each \$29.00 Price, 8-Gallon...each 35.00

Chino Closet Tanks



Chino White Finish Composition Closet Tank with high pressure bottom supply float valve, flush valve with rubber float, double acting china swing lever, 3-inch No. 14 gauge nickel-plated supply pipe with metal flange, 2-inch nickel-plated flush connection with coupling nuts and supporting screws.

Capacity, 8 gallons.
Outside depth, 18 inches.

Outside length, $21\frac{1}{2}$ inches. Outside width, $7\frac{1}{2}$ inches. Approximate shipping weight, 55 pounds.

Price.....each \$16.00

Enameled Iron Low Closet Tanks



Enameled in and out iron square front low tank, double-action lever with china handle, brass fitting, nickel-plated supply and 2-inch flush connection.

Width, 2034 inches. Height over all, 16 inches. Wall to front, 634 inches. Price...ea. "without Fittings.ea.....

Iron High Closet Tanks

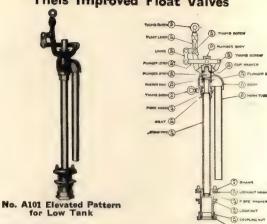


Fig. 644

Cast iron high tank with brass fittings, chain and pull.

Sizeinches	18x10x9	20x10x10
Price, Enameled All Overeach	\$25.00	\$30.00
Price, Enameled Inside each	22.50	26.25

Theis Improved Float Valves



Theis Float Valves have many valuable features. Quiet in operation, compound lever for operating

under high pressure, easy replacement of all working parts, convertible from elevated to low pattern, and most important, 8 sizes of shanks available to fit any old installation.



Price, No. A101
for Low Tank
...each
Price, No. B102
Bottom Supply
for High Tank
...each
Price, No. C103
Submerged for
Low Tank
...each

(COUPLING

Sectional View

Interchangeable Shanks

Curtin Rotary Float Valves

A valve which noiselessly yet rapidly fills the tank under all conditions. On very low pressures, opening the by-pass screw A permits free passage of water through ball cock and insures quick filling of tank.

The powerful compound leverage, together with the silent operation and non-corrosive qualities recommend this valve. Furnished for high and low tanks. Back supply type with integral stop can also be furnished for the all-white bathroom with no exposed metal.

Prices upon application.



Fig. 645

No. 597 Regular Float Rods

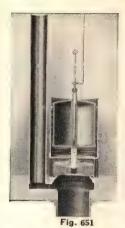
Lengthinches	6	7	9	10
Priceper dozen	\$1.00	1.10	1.40	1.60
With one end threaded reg	gular and	float	ball end	with
running thread for adjustment	10			
Lengthinches		8	10	12
Priceper dozen	\$1.20	1.60	2.00	2.40

No. 6707 Solderless Copper Floats

Price, No. 67	707, 4x5	Inches,	Oval .each	\$1.00
Price, No. 6				1.00



Fig. 646



Curtin Victory Flush Valves

Has a full, unrestricted waterway, and starts the siphon action immediately. It will, therefore, operate the largest closet with a

minimum amount of water.

Refills any closet. No refill tube required. Has a flat leather seat washer which will not leak. A slight tuyeh of lever lift. slight touch of lever lifts valve. Always finds its seat. Silent in operation. Float encased in cylinder is indestructible. Guiding bars insure positive seating of valve. Made of copper and cast composition metal with no soldered parts.

Prices upon application.

No. 900 Monarch Flush **Valves**

Monarch flush valve with heavy brass overflow and galvanized counter weight and solid rubber plunger.

Body made of red brass, overflow made of heavy gauge brass.

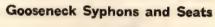
For low and high tanks.

Price No. 900......each \$4.50

No. 599 Douglas Flush Valves for Low Tanks



Price, No. 599, Complete with Ball and Stems. . . each \$3.00







No. 18 Gooseneck Syphonsinches 11/4 Price, Galvanized.....each \$2.00

No. 606 Gooseneck Syphon Seats Sizeinches 11/4 Price, N. P. Brass each \$1.40

No. 240H Dececo All White Flush Levers



Dececo all white flush lever. Has integral china flange and double action brass lever.

Price, No. 240H.....each \$1.25

No. 55 E.Z. Rotary Flush Levers



Handle rotates in either direction. Moving parts are frictionless.

Simple in construction and easy to install. Adjustable to any thickness of tank wall by means of telescoping shaft. Assembles in tank easily and quickly by the removal and replacement of one nut. Square on shank to fit - 1/8 - inch opening in tank. Can furnish 1/16 or 3/4 - inch square when specified specified.

Price, No. 55.....

No. 9366 Overflow Tubes for Flush Valves



Diameter incheseach

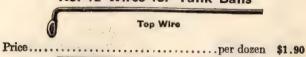
No. 12074 Adjustable Guides



 Size......inches
 1
 1½

 Price, Nickel-plated Brass.....per dozen
 \$4.00
 4.00

No. 72 Wires for Tank Balls



Bottom Wireper dozen \$1.20

No. 60 Refill Tubes

Price, 10-inch, for Elevated Float Valves. .per dozen 13 " " Low Down "

No. 245 Dececo Straight China Cased Closet Flush Connections



Complete with rough brass inside parts and two-piece adjustable china casing.

Price, No. 245 .. each \$4.75

No. 246 Dececo Offset China Cased Closet Flush Connections

Complete with rough brass inside parts and two-piece adjustable china casing.

1, 11/2 or 2-inch offset.

Price, No. 246 .. each \$4.75



No. 247 Dececo Elbow China Cased Closet Flush Connections



Complete with rough brass inside parts and two-piece adjustable china casing.

Price, No. 247 .. each \$5.25

China Flush Pipe Covers



China Flush Pipe Cover slips over 2-inch flush pipe connections.

over offset of 1, 1½ or 2 inches.



Fig. 661



Fig. 662

Price, Straight Cover with Spud Attached.....each \$6.90 Offset Cover with Spud Attached...,.., 6.90

Sani-Glaze White Offset Closet Connections

No. 200



Sani-Glaze White Covered Offset Connection for low tank closets. Brass tubing offset, cast brass lacquered nuts, rubber slip joint washers, spun brass escutcheon.

Packed 1 set in a box.

		PRICE.	EACH -	
Size In.	Less Nuts	With Nuts	With No. 500 Escut.	With No. 525 Escut.
2x ½x6 2x ¾x6	\$1.05 1.15	\$1.55 1.65	\$1.70	\$1.95
2x1 x6	1.25	1.75	1.80 1.90	2.05 2.15
$2x1\frac{1}{2}x6$ 2x2 $x6$	1.35	1.85	2.00	2.25

No. 300 Straight Connections \$.75 \$1.25 \$1.40 \$1.65 2x6

Sani-Glaze White Elbow Closet Connections

No. 100

Sani-Glaze White Covered Elbow Connection for low tank closets. Brass tubing elbow, cast brass lac-quered nuts, rubber slip joint washers, spun brass escutcheon.

Packed 1 set in a box.

Size In.	Less Nuts	-Price, With Nuts	Escut.	With No. 525 Escut.
2x3½x5 2x4 x6 2x5 x6 2x5 x7 2x5 x8	1.25 1.35 1.45 1.55	\$1.65 1.75 1.85 1.95 2.05	\$1.80 1.90 2.00 2.10 2.20	\$2.05 2.15 2.25 2.35 2.45
2x6 x8	1.65	2.15	2.30	2.55



No. 787 Slip Joint Elbows For Low Tank

Nickel-plated, with two 2inch iron pipe size cast nuts and rubber washers.

Size Inches	Price Each	Size	Price
	Lach) nenes	Each
$3\frac{1}{2}$ x5	\$1.30	5x6	\$1.75
4 x6	1.50	6x8	2.00



Slip Joint Elbows For High Tank Nickel-plated, with 2inch wrought brass nuts

and rubber washers. Length In. Size In. 4x11/4 3 \$.75 $\frac{1\frac{1}{4}\times1\frac{1}{2}}{1\frac{1}{2}\times1\frac{1}{2}}$ 1.00 6 6 1.20

Closet Flush Connections No. 885 Offset Connections



Nickel-plated, with two 2-inch iron pipe size

nuts and rubl	oer washers.
Size	Price
Inches	Each
1 11/2	\$1.30 1.50
2	1.70
2½	1.90
3	2.10
3½	2.30
4	2.50



No. 1497 Straight Connections

Nickel-plated, with two 2-inch iron pipe size nuts and rubber washers. Priceeach \$.90

Nickel-plated Cast Brass Slip Joint **Nuts and Washers**

No. 514



No. 678 Cast Brass Closet Spuds

Dipped Brass

I. P. Size Inches 11/4 11/2 2	Price Each \$.60 .60	
2	.75	

No. 7021 Closet Spuds Dipped Brass

Price, 11/4-in. with Locknut Only .. ea. \$1.00 11/2 " 65 66 66



No. 483 Closet Spud Reducers



Price,	2x1 ¹ / ₄ -incl 2x1 ¹ / ₂ "	l																							\$1 1	.0	10
--------	--	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----------	----	----

Brass Rods

Continuous Thread

No. 30

equipment and a second

Brass ¼-inch continuous thread rod made in any length. Specify length in ordering. per foct \$.12

No. 12152 Closet Tank Screw Hooks



Length		 	4 6	 		6. 1	. 4	٠	1.4				 1	nches	21/6
Price, Ste	el				 ٠.			. 1		۰			 per	gross	\$10.00
" Bra	ass	 		 	. ,		, ,	. ,		h				44	45.00

Flush and Supply Pipe Holders Sunnty

		-	
	_		



Price Each

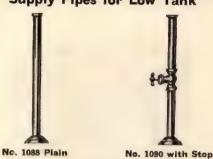
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.

Size	Fig. 672	Price
Inches		Eacl
3/8 I.P.		
½ I.P.		
3/4 O.D.		

	San
	Fig
Price	Size
Each	Inches
	11/40.
	13/8O.
	1½O.

Supply Pipes for Low Tank



Price, N. P.,	Plain each	14 21 32 \$2.00	I.P. 3/8 \$2, 50
u u	with Cock. "	4 00	4 50

Closet Flanges Screwed for Iron Pipe



These closet flanges stand for testing, and also serve as protection from the time of roughing-in until the job is finished. They also save time of fitting to the tile or cement floors, as the tile setters finish up to the flange. By striking with a cold chisel and hammer at the points indicated, the cover can easily be removed.

indicated, the cover can easily be removed.

Furnished in cast iron and brass. In brass, the closed ends can not be moulded for testing as in cast iron.



Female I. P



Female I. P.

No. 2100 2105 2113	Diam. In. 4 4 3	Depth In. 134 31/2 334	Price Each \$1.15 2.10 2.70	No. 2100 2105 2113	Diam. In. 4 4 3	Depth In. 134 31/2 33/4	Price Each \$2.60 5.50 5.50
2110	Mal-	e I. P. 21/4	\$2.80	2110	Male 4	I. P.	\$5.75

Closet Screws and Washers



No. 5474 Round Washer



No. 5458 N. P. Closet Screw with Brass Head and Oval Washer.... \$5.00

No. 12232 N. P. Brass Closet Bolt, with N. P. Head and Heavy Oval Brass Washer 15.00 No. 5474 Round Washers 2.00

5586 Oval No. 5458 Closet Screw and Washer



No. 4120 Vitreous China Bolt Caps

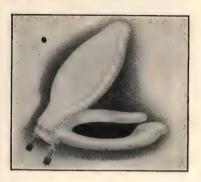
For Floor Screws

White vitreous china bolt caps to set over brass floor screws.





No. 186 Sani-White Closet Seats



Sani-White open front full saddle seat and cover for extended lip bowl, all white including hinges and white cushion bar bumpers. Exposed metal eliminated.

Price, No. 186.....each \$23.90

No. 480 Sani-White Closet Seats

Sani-White plain pattern seat and cover with nickel-plated, heavy cast brass closrufing hinge and white cushion bar bumpers.

For regular bowl.



Price, No. 480, with Cover, Plain Pattern....each \$15.00 Price, No. 380, with Cover, Full Saddle....each 16.11

No. 425 Sani-White Closet Seats



Sani-White 11/2-inch square back seat and cover, reinforced front and back with spiral grooved dowels, heavy nickel-plated brass bar hinge. For regular bowl.

	with Cover	
	without Cover	

No. 142 Sani-White Closet Seats



All Sani-White plain pattern seat and cover with concealed hinge, white posts, and white rubber bumpers. No exposed metal.

For regular bowl.

Price, No. 142, with Covereach \$16 67 150, without Cover..... " 10 56

Little Toidey Closet Seats

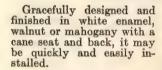


Finished in celluloid pyroxylin, pastel pink or blue with comfortable back rest, high side arms of nickeled rods, and a white leather strap in front, which form a strong safe enclosure. Little Toidey slipseasily onto the top of the big seat, the patent clasps gripping through the inside of the hole, at front and back so it cannot be wiggled off. Pat-

ent fasteners are rubber covered, and bottom of seat fitted with rubber bumpers. Readily opened and folded, yet cannot collapse. Packed in a neat box. Size folded, 12x10x3½ inches. Weight, 2½ pounds.

Price, Closed or Open Front Seat.....each \$4.85

Closet Chairs



The front rail is attached to the seat and is raised with the seat, thus overcoming all insanitation.



Height Height	Over All Gover All Floor with R	inches	32
TT 1 1	6 TO T	menes	$19\frac{3}{4}$
Height	of Front Legs with Rubber Tips.	inches	17
Extren	ne Inside Width of Chair Between	Side Rails	
		inches	141/4
Width	of Back	inches	15
TT . 1 . 1 . 4	CD 1 37 040 704	· · · · · · · · · · · · · · · · · · ·	19
Height	of Back, Nos. 316 and 317	inches	$13\frac{1}{2}$
Height	of Back, Nos. 318 and 319	inches	181/4
0			. –
	With Wood Cover	-PRICE, I	
No.	Style	White	Walnut
316W	For Oval Bowl	\$26.30	\$24.80
317W	For Extended Lip Bowl	27.80	26.30
,,		21100	20.00
	With Cane Cover		
316C	For Oval Bowl	\$28.50	\$27.00
317C	For Extended Lip Bowl	31.00	29.50
318C	For Oval Bowl	29.50	28.00
319C	For Extended Lip Bowl	32.00	30.50
Nos	316 and 317 for use with tank or flu		00.00
Nos.	318 and 310 for use with flush real-	ish valve.	
VOS	XIX and XIV for ugo with Hugh walve	on lar	

Nos. 318 and 319 for use with flush valve only.

Whale-Bone-Ite Closet Seats



Made of a laminated core with layers running crosswise and covered with a sealed composition of whale-bone-ite which is put on in its softened state under heavy hydraulic pressure, anchoring covering to core, then vulcanized. Has high polish, is sanitary and impervious to moisture and the action of uric acid. Has no joints to open.

Whale-Bone-Ite Extended Open Front Closet Seats



No. 21-9 without Cover

Whale-Bone-Ite extended open front seat without cover with nickel-plated bar hinge and straight seat posts. For all extended lip bowls.

" Mahogany Finisheach	\$14.80 18.30
Price, Ebony Finish	\$26.00
" Mahogany Finish	30.00

No. 16-91 Whale-Bone-Ite Saddle Seats with Cover



Whale-Bone-I te saddle seat with cover and nickel-plated bar hinge with straight seat post, for all staple type bowls.

Price, No.	16-91, 16-91	Ebony Finisheach Mahogany Finish«	\$25.80
	10-31,	Manogany Finish	30.80

No. 24-9 Whale-Bone-Ite Oval Seats without Cover



Whale-Bone-Ite oval seat without cover with nickel-plated bar hinge and straight seat posts, for all staple bowls.

Measures from hinge posts center to front edge of seat, 1734 inches long, 141/2 inches wide. Hole 93/4 inches long, 8 inches wide.

Price, No. 24-9, Ebony Finish each \$13.50 24-9, Mahogany Finish....

No. 177 Closet Seats



11/2-inch selected quarter sawed oak seat with open front and square back, fitted with heavy cast brass hotel hinge.

Price, No. 177 Natural, Antique, or Golden Oak, Imitation Mahogany or Imitation Cherry, Rubbed Finish \$7.70

No. 120 Closet Seats



Plain, oval oak square back seat and cover with nickelplated cast brass bar hinge.

Price, No. 120each \$5.00

No. 14 Close Rough Closet Seats



Oak oval seat and cover with nickel-plated close rough bar hinge.

For close roughing-in of regular bowl.

Furnished in plain or quartered oak, in golden, antique, or natural color, imitation mahogany and ebony finish and genuine walnut.

Price, Oak and Imitation Mahogany Finisheach \$6.70

Closet Seat Hinges





No. 677

No. 355 Nickel-plated Cast Brass Offset Hinges......per pair 1.25

San-Equip Waterless Toilets With Improved Self Drain Storage Tank



This model provides intensive chemical treatment of the sewage in the first chamber of a two-chamber tank. Solids are retained until liquified and sterilized and then discharged auto-matically into a small filter pool close to the top of the ground. A small chemical supply monthly is the only care or expense. Marked advantages are; no handling of sewage or apparatus, easy installation, less care, less cost because smaller systems may be used and safer disposal of small amount of liquid daily instead of a tank full at one time.

Each system consists of the following: 1 best grade vitreous china bowl with oak finish non-split seat; 12 feet of ventilating pipe, 10 feet white enameled, 2 feet galvanized, roof flange and vent cap; 1 storage tank of heavy gauge copperoid iron with simple, efficient mixer, full change of chemical, pipe stay, toilet paper and holder, putty and roof

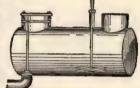
All storage tanks are rust-proofed inside and outside by a permanent mineral enamel.

	~		RATING		Diam.	Lgth.	Ship.	
	Cap.	NUMBE			Tank	Tank	Wt.	Price
No.	Gals.	Home	School	Mill	In.	In.	Pounda	Each
360A	60	. 4			$22\frac{1}{2}$	36	200	\$64.00
380A	80	. 7	15	12	$22\frac{1}{2}$	48	275	76.00
3128A	128	12	25	20	28	48	325	88.00
*3129A	128	12	25	20	28	48	325	90.00
*Same	as No.	3128A	excer	ot has	20-foot		020	30.00

With Drain Valve Tank

Drain valve toilet system with drain valve tank will be furnished where desired instead of the self-drain type. 4-inch outlet controlled by pressure plug

Made in two sizes for single bowl, also all sizes of multiple bowl systems. Made also in tight storage tank, no outlet. RATING NUMBER OF PEOPLE Home School Mill



Lgth. Tank

380	V	80	4	T9	11	22/2	48	210	\$76.00
3128	3V :	128	7	20	15	28	48	325	88.00
*3129	V :	128	7	20	15	28	48	325	90.00
*Sar	me as	No.	3128	V exc	ept has	20-foot	vent.		
									Price
No.				-			* "		Each
530A	Cart	on or	Six 8	5-pou	ind Car	ns			. \$5.60
510	10-p	ound	Can	for	60-galle	on Sewa	ge		1.85
515	15	66	66	44	80 "	66			
525	25	66	66	# 1	25 "	а			0 10

Chemical Commode Toilets

Tank

With Chemical and Vent Pipe

Provides a temporary toilet which may be installed indoors. Should not be confused with the larger permanent types of Chemical Storage Tank Systems.

Has a gray enameled jacket with removable 8-gallon galvanized inner container, oak finished dowelled, non-split seat, 7 feet of 3-inch gray pipe, two elbows, wall collar, toilet paper and holder, and 5-pound can of chemical.

Weight, complete, 40 pounds.

Price, No. 130, Complete each \$8.90

Chemical Supplies for Commodes

Price, No. 505, 5-pound Can Dry Chemical, ½ Doz-	
en in Carton	\$1.00
Price, No. 508, 1-gallon Can, Liquid Chemical, 1/2	
Dozen in Case	1.75
. Apoly care survable for use off any style of commode	romer

Steel Closet Partitions



Fig. 701

Steel Closet Partitions with doors and all parts formed out of a special gauge steel of prepared metal furniture stock, annealed and patent leveled. Corners of doors are mitered and welded.

The doors are provided with self-closing spring hinges and bumpers with rubber cushions. They are also provided with double wardrobe hooks and sutstantial bolts on the inside. All hardware is finished in black or any finish desired.

The foot pieces are properly located and secured to the floor with expansion shields or bolts. The partitions are secured to the rear wall in the same manner as the starting standard, which is formed so as to make an angle to permit anchoring to the wall.

These closet compartment partitions are finished in baked japan in dark olive color. They may also be finished in light olive, black or maroon.

This steel work is sanitary, durable and economical and is easily erected. It is particularly commendable for use in school toilet rooms, and in factory toilet rooms.

May also be furnished without doors and with banks.

Standard sizes:

Depth: 3 feet, 3½ feet, 4 feet, 4½ feet or 5 feet.

Width: 2½ feet, 2¾ feet or 3 feet.

Height: 5½ feet from floor, partitions set 12 inches off

Prices upon application.



Fig. 711

Porcelain Urinal Stall with extended shield, nickelplated push button, Royal flush valve with back inlet and 1inch ground joint union angle stop, nickel-plated fan spreader with slip nut, nickel-plated brass outlet strainer and connection for lead or iron pipe.

Height of stalls over all 41% inches Height of stall from floor line to top of stall 38 inches

Width		inches	18	24
Approximate	Shipping	Weightpounds	345	415

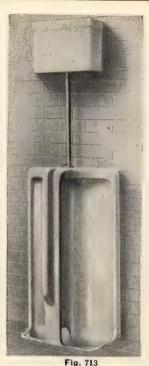


Fig. 712

Porcelain Straight Front Urinal Stall with nickelplated Royal flush valve with back inlet and 1-inch ground joint union angle stop, china oscillating handle, nickel-plated brass fan spreader with slip nut, nickel-plated brass outlet strainer and connection for lead or iron pipe.

Height of stall over all 41% inches Height of stall from floor line to top of stall 38 inches

Widthinches Approximate Shipping Weightpounds	18 345	24 415
Straight front pattern also made in vitreous china 18-inch sizes.		



Duplex Semi - vitreous Porcelain Double Urinal Stall with center shield, drip receptors and center waste outlet, all in one piece, all exposed surfaces glazed, two integral vitreous spreaders with one inlet and brass spud, 3-gallon porcelain tank with automatic fittings, nickelplated flush pipe, nickelplated brass waste coupling with porcelain strainer.

The Duplex urinal stall has many advantages over the regulation stalls in cost of ir stallation and sanitary qualities. It eliminates the complete roughing-in of one urinal, one flush pipe and outlet connection. The flush spreaders are made an integral part of the stall, which eliminates two brass spreaders. All unsightly and troublesome joints are eliminated, insuring perfect sani-

Width Over All..... Height " "
from Floor Line "

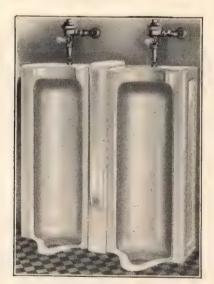


Fig. 714

Battery of Two Porcelain Urinal Stalls with integral drip receptor, separate porcelain seam cover with projecting shield, fitted with nickel-plated bronze Royal flush valves with china lever handles, loose key angle stop, nickel-plated inlet connection and spreaders, waste outlet strainers and vitrous china china the strainers and vitrous china china the strainers and vitrous china china the strainers and vitrous china c vitreous china gratings.

Height over all 42¾ inches Height above floor 39 inches Wall to front of partition 13½ inches

Size Approximate Shipping Weig Approximate Shipping Wei	ht Each Stall nounda 260 220
	nounds on on

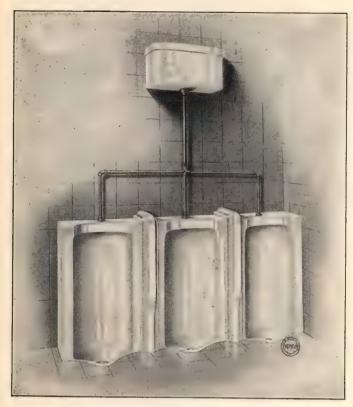


Fig. 721

Porcelain Urinal Stalls with Porcelain Overlap Partition Shields, vitreous china tank on concealed bar hanger operated by periodic discharge fitting with top supply, nickel-plated three-part flush connection, nickel-plated fan spreaders with slip nuts, nickel-plated outlet strainers and connection for either lead or wrought iron pipe.

Straight front pattern stalls only also made in vitreous china in 15 and 18-inch sizes.

Furnished also with integral hooded vent.

Height over all 41¾ inches Height from floor line 38 inches Wall to front of lip 15 inches

Widthinches	15	18	21	24
Length Over Three Stalls "		60		78
Approx. Shipping Weight, Porce-		-		, ,
lain Stall, Eachpounds	275	320	360	390
Approx. Shipping Weight, Vit-				
reous China Stall, Each, pounds	310	345		
Approx. Shipping Weight, Two				
Partitions pounds	150	150	150	150
Approx. Shipping Weight, Tank				200
	110	110	110	110
Prices on porcelain urinals are	for	kiln-	run y	vare.
An extra charge is made for special	selec	tion.		1 602 00



May be used singly or in batteries. Used with a seam cover it is a practical and sanitary installation.

Porcelain Extended Wing Front Urinal Stall with vitreous china four-gallon round front tank on concealed bar hanger, periodic discharge fitting, 3/2-inch iron pipe size top supply, nickel-plated brass flush pipe, nickel-plated brass fan spreader with slip nut, nickel-plated brass outlet strainer and connection for either 2-inch lead or iron pipe, and vitreous china strainer.

Height over all 41¾ inches Height from floor line 38 inches Wall to front of lip 15 inches

Width of Stallinches	18	24
Approximate Shipping Weight, Urinal Only pounds	320	390
Approximate Shipping Weight, Tank and Fittingspounds	60	60

Prices on porcelain urinals are based on kiln-run ware. An extra charge will be made for special selection.

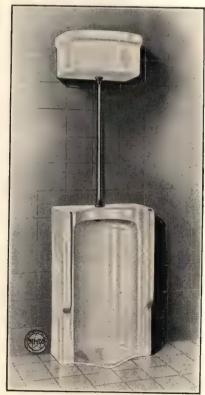


Fig. 722



Fig. 731

Enameled Iron Roll Rim Lipped Urinal with integral back, concealed wall hangers, enameled iron tank with automatic flushing device and top supply, with stop, nickel-plated brass flush and perforated brass wash down pipe, finished 1¼-inch brass beehive strainer, and 1¼-inch nickel-plated bag trap.

Length Feet	Number of Lips	Approx. Shipping Weight Pounds	Length Feat	Number of Lips	Approx. Shipping Weight Pounds
2	1	130	31/2	2	185
$2^{1/2}$	1	150	4	$\bar{2}$	205
3	2	170	5	3	245

Can be furnished with bottom supply or chain and pull fittings.

Royal Flush Valves For Urinals

These very of water at a automatic causing eigenstate sufficient from the care of a direct or require repetente between 5

These valves flush the same amount of water at each operation, and thus automatically prevent the user from causing either an excessive or an insufficient flush.

They can be used on plumbing fix-

They can be used on plumbing fixtures of any manufacture, on either direct or tank supply, and do not require regulating for any pressure between 5 and 100 pounds. They are noiseless, easy to operate, and have a wide range of operation.

wide range of operation.
Fitted with ½-inch angle stop, china push button, ¾-inch O.D. flush connection, spud coupling and flanges.

Price each \$22.00

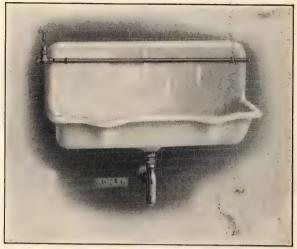


Fig. 733

Enameled Iron Roll Rim Lipped Urinal with integral back, concealed hangers, brass beehive strainer, finished brass perforated flush pipe with loose key stop and 1¼-inch nickel-plated offset P trap.

Length Feet	Number of Lips	Approx. Shipping Wt., Lbs.	Length Feet	Number of Lips	Approx. Shipping Wt., Lbs.
2	1	95	31/2	2	150
21/2	1	115	4	2	170
3	2	135	5 .	3	210



Vitreous China Bedfordshire Urinals

Vitreous china Bedfordshire flat back urinal with lip, earthenware horn inlet and outlet.

No.	 * *			 		 		 	 						1			2		3	3	
Size.					 		 		. !	in	C	he	28		X.	18	13	3x	15	12	:14	
Price						 		 														



Vitreous China Bedfordshire Urinals

Vitreous china Bedfordshire corner urinal with lip, earthenware horn inlet and outlet.

No	,		1	2	3
Size		inches	13x13	11½x11½	10½x10½
Price					/- /-

Solid Porcelain Urinal Tanks



Fig. 741

Semi-vitreous porcelain urinal tank with one pair iron concealed hangers only. Made with top supply fittings only.

Capacity	Lgth. Over	Width	Depth	Price
Galions	All, In.	Inches	Inches	Each
3	$\begin{array}{c} 16 \\ 21 \end{array}$	8 101/2	$12\frac{1}{2}$	\$14.00

Kohler Enameled Iron Urinal Tanks



Enameled in and out 3-gallon automatic syphon flushing urinal tank with brass top supply fittings, for 3/s-inch iron pipe and flush valve with collar for 1-inch O. D. pipe.

Price, as Described. .ea. \$25.00

Can be furnished enameled inside only, with chain and pull fittings and bottom supply.

No. 5510 Urinal Wash Down Pipes with 1/2-Inch Compression Loose Key Stop and Straps



Length	F	RICE, EAC	н	Length		PRICE, EACH-	
Urinal	N. P.	Fin.	Galv.	Urinal	N. P.	Fin.	Galv.
Ft.	Brass	Brass	Iron	Ft.	Brass	Brass	Ioon
2	\$4.30	\$4.00	\$3.30	6	\$9.10	\$8.40	\$7.30
3	5.50	5.10	4.30	8	11.40	10.60	9.30
4	6.70	6.20	5.30	10	13.90	12.80	11.30
5	7.90	7.30	6.30				
Tf	without	Ston	deduct		1 80	1 60	1 20

No. 1785 Urinal Spreaders



Fits a wide range of urinals and is regularly made with ½-inch iron pipe inlet.

Price, No. 1785 each	\$2.25
" " 1785, with %-inch O. D.	
Slip Inlet each	2 00
Add for Bushings to Slip 1, 11/8, or	
1¼-inch O. D each	. 50



No. 208 Slip Joint 90° Brass Elbows

With Slip Joint on Both Ends

	N. P.		N. P.
Size	Price	Size	Price
Inches	Each	Inches	Each
3/4	\$.65	11/4	\$.95
1	.95	11/2	1.15

Urinal Traps

Nickel-plated Brass



No. 1 Slip Joint Inlet Iron Pipe Outlet



No. 2 With Ground Joint

Urinal Stall Strainers



Nickel-plated brass with 4½-inch flange and removable face.

For Lead Pipe No. 22590

Price, for 2 inch Lead Pipe....each \$3.50
" 2 " I. P. Female Pipe " 3.50

Vitreous China Strainer Covers



Price, Vitreous China Cover to fit over Brass Outlet Strainer....each \$1.00

No. 3645

No. 4244 Brass Beehive Urinal Strainers With Coupling



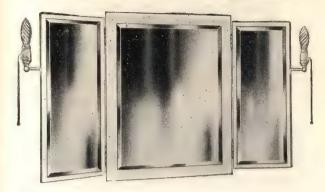
Size Outlet	Diam. Flange	PRICE, PE	P Dozen-
Inches	Inches	Fin.	N. P.
11/4	3	\$30.00	\$36.00
11/2	3 .	42.00	48.00
2	4	60.00	66.00

No. 4241 Brass Beehive Strainers With Flange

Size Inches	Fin. PRICE, PE	R DOZEN N. P.
2	\$8.40	\$10.20
3	12.00	15.00
31/2	18.00	22.20
4	24.00	30.00



Model OSWE Milady Dressing Mirrors



For the dressing room, boudoir or over the lavatory. In addition to its adaptability to the home, the OSWE is

an ideal equipment for the beauty salon.

Mirror is constructed from heavy Armco metal and highly finished in white crystal snow. The master mirror is of highest quality plate glass 18x24 inches in size with a 1-inch bevel.

The wing mirrors are of same high quality bevel plate.

Model OSWE is equipped with pull chain sockets and frosted spiral globes on each wing.

Model OSW is furnished without the side electric lights.

	DIMEN	sions, In	CHES
Description	Width	Height	Depth
Master Mirror	18	24	
Wing Mirror	9	24	
Over All Dimensions Main Frame	203/4	263/4	
Over All Dimensions Including Wings	$46^{1/2}$	$26\frac{3}{4}$	
Size Body Flange	15/8		$1\frac{3}{8}$
Shipping weight, 60 pounds.			
Price, Model OSWE, with Side Electric Lig	thts	each \$	50.00
Price, Model OSW, without Sidelights		each	40.00

No. 100 Recessed Steel Medicine Cabinets



Recessed steel medicine cabinet, white enameled all over, with bevel plate mirror, 3 adjustable crystal glass shelves, glass knob and white enameled hinges.

Height inches	3 263/4
Width "	203/4
Wall Opening "	$23\frac{1}{2}$ x $17\frac{1}{2}$
Size Mirror. "	16x22
Price, No. 100	
pach	\$29.50

Steel Wall Medicine Cabinets



Steel wall medicine cabinet white enameled all over, plain glass mirror, 3 glass shelves, white porcelain knob and white enameled hinges.

No.	Width Inches	Height Inches
800	203/4	243/4
816	$16\frac{3}{4}$	$20\frac{3}{4}$
3.7	Mirror	Price
No.	Inches	Each
800	14x18	\$18.00
816	12x16	15.00

Recessed Steel Medicine Cabinets

Wall Opening

32.50

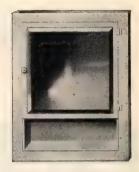
Recessed steel medicine cabinet with open recess shelf 6 inches high, white enameled all over, with bevel plate mirror, 3 adjustable crystal glass shelves, glass knob and white enameled hinges.

Over All

1110

140*	Inches	inches
110	$20\frac{3}{4}x26\frac{3}{4}x5$	$17\frac{1}{2}$ x $23\frac{1}{2}$ x $3\frac{3}{4}$
1110	$20\frac{3}{4}x30\frac{3}{4}x5$	$17\frac{1}{2}$ x $27\frac{1}{2}$ x $3\frac{3}{4}$
	Size Mirror	Price
No.	Inches	Each
110	16x16	\$28.00

16x29



No. 610 Steel Recess Medicine Cabinets White enamel all over, wi

White enamel all over, with plain plate mirror and open shelf, three adjustable glass shelves, porcelain knob, and white enameled hinges. No. 600 does not have open shelf.

a la man	- Management	
No.	Over All Inches	Wall Opening Inches
610	213/4x313/4	171/2x271/2
600	$21\frac{3}{4} \times 25\frac{3}{4}$	17½x21¾
710	173/4x273/4	133/4x233/4
700	173/4×213/4	133/4x173/4
	Mirror	Price
No.	Size, Inches	Each
610	14x18	\$20.50
600	16x20	20.00
710	12x16	16.50
700	12x16	15.00

Bathroom Mirrors



Beveled plate glass, white enameled narrow steel frame, ½ inch wide and ½ inch deep to screw to wall.

No.	Mirror Inches	Frame Inches	Price Each
1N 2N		17¼x23¼ 15¼x19¼	
		$13\frac{1}{4}$ x $19\frac{1}{4}$	

Bathroom Mirror Attachments



 No. 40
 plated, highly polished.

 Price, Shelf and Bracket
 each \$2.60

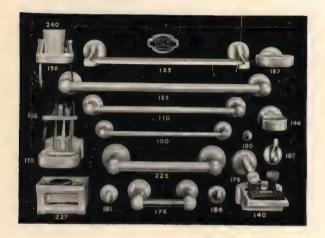
 " Bracket and Towel Bar
 4.20

 " Towel Bar and Bracket
 " 1.70

 " Rack
 " 6.00

China Easy Set Bathroom Furnishings

No. 33 Display Boards



Carefully designed and constructed so as to display the features of the Chinawyte line to best advantage.

Covered with black velvet and fitted with all cleats in place ready to receive fixtures.

Charge is made for the articles only on the board as listed below. List consists of one of each number as shown.

Size, 32x22 inches.

No. 100 110 125 133	Description Towel Rack, 15-inch	Price Each \$1.50 2.60 4.30 5.80
140 146 156 158	Shaving Combination. Tumbler Holder and Tooth Brush Holder. Tooth Brush Holder.	4.00 1.60 2.00 1.40
240 167 168 175	Opal Tumbler Soap Holder "Toilet Paper Holder	.50 1.90 2.00 1.10
176 225 227 180	Hand Rail, 12-inch	3.30 4.80 4.00 .50
181 184 187	Razor Strop Hook	.60 .60 1.00

Price, No. 33 Display Board, as Listed. each \$43.50

No. 100 China Easy Set Towel Bars



1/2-inch solid opal bar, round china posts. Length of Bar...inches 15 18 24
Price, No. 100 ...each \$1.50 1.60 1.90 2.40

No. 110 China Easy Set Towel Bars



3/4-inch opal bar, china posts; base of post, 25/8 in. Length of Bar....inches 15 18 24 30 36 Price, No. 110....each \$2.40 2.60 2.90 3.20 3.70

No. 123 China Easy Set Towel Bars



1-inch round white wood bar. Base of china post, 3 in. Length of Bar.....inches 18 Price, No. 123.....each \$3.70 4.30 5.00 5.80

No. 125 China Easy Set Towel Bars



1-inch solid opal round bar, chin posts. Base 3 in. diam.

Length....inches 15 18 24 30 36 Price, No. 125....each \$3.50 3.70 4.30 5.00 5.80

No. 126 Towel Bars with Center Support



Two Bars, Length, each in. 12 15 18 Price, No. 126. each \$6.00 6.50 7.00 8.00 9.00 10.50

No. 128 China Easy Set Corner

Towel Bars

1-inch opal round towel bar with e a s y set china round posts.

No. 128 for right corner; No. 129 for left corner. Length. inches 15 18 24 30 36 Price. each \$3.50 3.70 4.30 5.00 5.80

No. 127 China Easy Set Towel Bars

Square Wood Bar-Square China Posts



A 7/8-inch square wood towel bar with china easy set square posts.

....inches Price, No. 127.....each \$4.00 4.70 5.40 6.20

China Easy Set Bathroom Furnishings



With Concealed Screws

To install, fasten concealed beyeled slide to wall; fixture then slips down over slide, concealing screws. Fixtures can be removed for cleaning; or a drop of glue on slide will make installation permanent. Sanitary.

No. 133 China Shelves



Loose fitting opal shelf with china brackets having con-cealed screws. Brackets are placed at the end of the shelf keeping it from moving sidewise and prevents articles from falling off the end. The lug on the front of the bracket keeps the shelf from slipping forward and the special locking feature prevents the shelf from lifting at the rear.

Price, No. 133, 5 Inches Wide, % Inch Thick ... each Price, No. 1338, 5 Inches Wide, % Inch Thick ... each 5.90 6.80 8.10 9.60

No. 137 China Easy Set Bolted Shelves

Opal glass slab 5 inches wide. 56 inch thick. 2-piece bracket. Bolted together.

....inches Length... Price, No. 137.....each \$2.50

No. 138 China Easy Set Shelf Combinations



China easy set one-piece bracket combination with opal glass shelf, square wood towel bar and 8 tooth brush holders.

Length inches 18 24 30 36 Price, No. 138 each \$7.50 8.50 10.00 11.50

No. 232 China Easy Set Shelf Combinations



Loose locked shelf combination with easy set china brackets and opal glass shelf with 2 tumbler holders.

Shelf, 5 inches wide.

Length	inches	18	24	30
Price, No. 232	each	\$7.30	8.30	9.80

No. 234 Easy Set China Shelf Combinations



Loose tocked shelf combination with Easy Set china brackets and glass shelf with one tumbler holder and one soap holder. Shelf 5 inches wide.

Length inches 18 24 30 Price, No. 234 each \$7.70 8.70 10.20

No. 236 China Easy Set Shelf Combinations



Loose locked shelf combination with easy set china brackets and opal glass shelf with 2 soap holders.

Shelf 5 inches wide.

Length....inches 18 Price, No. 236.....each \$8.10 9.10 10.50

No. 140 China Shaving Set Holders



A compact unit for holding Gillette razor set, shaving

.....each \$4.00



No. 159 China Easy Set Tooth Brush and Paste Holders

Holds tooth paste and 6 tooth

Diameter of flange, 25% inches. Projects 3½ inches. Width over all, 3¾ inches.

Price, No. 159each \$1.60

No. 158 Easy Set China Tooth Brush Holders



China wall tooth brush holder with easy set method of concealed attachment.

Holds four tooth brushes.

Price, No. 158 each \$1.40

Tumbler and Soap Holders







No. 167



No. 168

Price,	No.	156, Tumbler and Tooth Brush Holder .each	\$2.00
46	66	167, Soap Holder for Lavatories "	1.90
-	-	168 " with Drain Holes for	
Sho	wer	Stalls each	2 00





No. 171

Price, No. 170, Soap Holder for Bath Tub or Sink	
Price, No. 171, Soan Holder with Drain Holes for Bath	\$2.30
Price, No. 171, Soap Holder with Drain Holes for Bath Tub and Shower Combinedeach	2.40

Toilet Paper Holders





Price, No. 175, Single Post Type, also Used as Individual Towel Rack....each Price, No. 176, Two Post Type with Spring Roller. " 3.30

Bath Room Hooks



No. 180



No. 181



No. 184



Price, No. 180, for Wash Cloth or Water Bag, Flange, 1½-inch Diameter, Projects 15% Incheseach	\$.50
Price, No. 181, for Razor Strop, Flange, 21/4 Inches in	φ. ου
Diameter, Projects 2 Incheseach	.60
Price, No. 184, Robe Hook, Flange, 2¼ Inches in Diameter, Projects 2½ Incheseach	
Price, No. 187, Double Robe Hook, Flange 2½ Inches	. 60
in Diameter, Projects 21/4 Incheseach	1.00

No. 225 Hand Rails



Solid opal bar, 1¼ inches in diameter. Round china posts. Base of posts, 3% inches in diameter. Length of Bar....inches Price, No. 225 each \$4.30 4.80 5.50

No. 226 Hand Rails



tight

Can be used on any wall surface by fastening with slides in the usual manner or can be also tiled into the wall.

One-piece type made in tile size. 6 inches wide by 3 inches high.

Price, No. 226.....each \$2.70

No. 227 China Easy Set Soap Holder and Hand Rail

One-piece construction.

Made in tile size 6 inches "wide and 3 inches high.

Projects 31/2 inches.

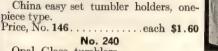
Price, No. 227.....each \$4.00



China Easy Set Tumbler Holders and **Tumblers** No. 146

piece type.

Opal Glass tumblers. Price, No. 240 each \$.50





No. 382 China Razor Strap Hooks With Wall Plug



Can be installed on the face of the tile (by chipping a hole in the tile) or installed flush with the tile.

Size, 2x3 inches.

Projects from wall, 21/4 inches.

Price, No. 382.....each. \$1.50

No. 384 China Single Robe Hooks With Wall Plug

Can be installed on the face of the tile (by chipping a hole in the tile) or installed flush with the tile.

Size, 2x3 inches. Projects from wall, 3 inches.

Price, No. 384.....each \$1.50



No. 387 China Double Robe Hooks

With Wall Plug

Can be installed on the face of the tile (by chipping a hole in the tile) or installed flush with the tile. Size, 2x3 inches.

Projects from wall, 2½ inches.

Price, No. 387....each \$2.00

No. 395 China Tooth **Brush Holders** With Wall Plug

Can be installed on the face of the tile (by chipping a hole in the tile) or installed flush with the tile.

Size, 2x3 inches.

Projects from wall, 3½ inches.

Price, No. 395each \$2.00



No. 990 Vitreous China Pedestal Soap Dishes



Vitreous china octagonal pattern lipped pedestal soap dish to fit in faucet hole on lavatory slab.

Price, No. 990.....each \$3.00

No. 324 Square White Towel Bars With 3x3-inch China Wall Flanges



7/8-inch white wood bar. Projects from face of wall 4

Length, Center of Posts...inches Price, No. 324.....each \$4.30 4.80 5.30 6.00

No. 325 Round White Towel Bars

With 3x3-inch China Wall Flanges



1-inch white wood bar. Projects from wall 4 inches.

Length, Center of Posts . . . inches Price, No. 325.....each \$4.30 4.80 5.30 6.00

No. 390 Square White Towel Bars

With 2x3-Inch Plug Type Wall Posts



%-inch white wood bar. Projects from wall 2% inches.

Length, Center of Posts....inches 18 24 Price, No. 390each \$4.30 4.80 5.30 6.00

No. 760 Dececo All White China Lighting Fixtures



No. 760 Dececo All White China Lighting fixture complete with concealed hanger and opal glass shade.

Price, No. 760per pair \$18.00

Unity China Recess Bath Room Accessories No. 333 China Shelves



Loose fitting opal shelf with china brackets. Brackets are placed at the end of the shelf, keeping it from moving sidewise and preventing articles from falling off the end. The lug on the front of the bracket keeps the shelf from slipping forward and the special locking feature prevents the shelf from lifting at the rear. Base of bracket, 3 inches diameter. Projects over all, 51/8 inches.

inches 18

\$9.30 7.20 8.10 9.40 10.90

No. 320 Tooth **Brush Holders**



Size, 6x3 inches. Projects from wall, 1 1/8 inches. Weight

boxed, 134 pound. Price, No. 320....each \$2.50

No. 346 Tumbler Holders



Size, 6x3 inches. Projects from wall, 3% inches. Weight boxed, 2 pounds 1 ounce. Price, No. 346 ... each \$2.50

No. 365 Soap Holders



Size, 6x3 inches. Projects from wall, 3 inches. Weight boxed, 2 pounds 2 ounces. Price, No. 365 . . . each \$2.50

No. 366 Soap Holders With Flush Drain



Size, 6x3 inches. Depth over all, 21/8 inches. Weight boxed, 2 pounds 4 ounces. Price, No. 366 ... each \$2.80

No. 326 Hand Rails



Size, 6x3 inches. Projects from wall, 2 inches. Weight boxed, 1½ pounds. Price, No. 326...each \$2.20

No. 356 Tumbler and Tooth Brush Holders



Holds 6 brushes. Size, 6x3 inches. Projects from Weight wall, 31/16 inches. boxed, 2 pounds 4 ounces. Price, No. 356...each \$3.00

No. 381 Razor Strop



Size, 3x3 inches. Projects from wall, 134 inches. Weight boxed, 10 ounces. Price, No. 381 . . . each \$1.50

No. 367 Soap Holders With Non-Draining Rim



6x3 inches. over all, 2% inches. Projects from wall, ¼ inch. Weight boxed, 2 pounds 5 ounces. Price, No. 367...each \$2.80

Unity China Recess Bath Room Accessories

No. 601 Soap Holders



Size, 6x6 inches. Depth from face of wall, 25% inches. Projects from wall, 2½ inches. Price, No. 601...each \$6.00

No. 602 Soap Holders



Size, 6x6 menes. Depth from face of wall, 25% inches. Projects from wall 2½ inches. Price, No. 602...each \$6.00

No. 603 Soap Holders



Size, 6x6 inches. Bepth from face of wall 2½ inches. Projects from wall 2½ inches. Price, No. 603...each \$6.50

No. 611 Toilet Paper Holders



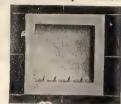
Size, 6x6 inches. Recessed into wall 3% inches. Price, No. 611...each \$4.50

No. 615 Tumbler Holders



Size, 6x6 inches. Depth. inside overall 3½ inches. Recessed into wall 2½ inches. Pricets from wall 1½ inches. Price, No. 615...each \$3.50

No. 606 Soap Holders



Size, 6x6 inches. Depth from face of wall, 25% inches. Price, No. 606...each \$3.50

No. 607 Soap Holders



Size, 6x6 inches. Depth from face of wall 25% inches. Projects from wall $\frac{7}{8}$ inch. Price, No. 607...each \$3.50

No. 608 Soap Holders



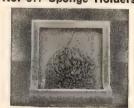
Size, 6x6 inches. Depth from face of wall 25% inches. Projects from wall 1 inch. Price, No. 608...each \$4.00

No. 612 Toilet Paper Holders with Hood



Size, 6x6 inches. Recessed into wall, 33% inches. Hood projects 2½ inches. Price, No. 612...each \$5.80

No. 617 Sponge Holders



Size, 6x6 inches. Recessed into wall 3% inches. Projects from wall 2½ inches. Price, No. 617 ...each \$5.50

No. 100 Health-O-Meters



The Health-O-Meter is the latest design in this type of scale. It is well constructed, with hardened bearings, rack and pinion, of best quality steel. Equipped with regulating screw for close adjustment. A cork mat is inlaid in the platform. The finish is pure white, of the best oven baked enamel. The figures are prominently shown on the dial, the

glass being held in place by a double nickel-plated sash.

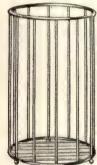
Capacity, 250 to 300 pounds by 1-pound graduations (300 pounds to order); platform, 7x11 inches; height, 8 inches; weight, packed, 27 pounds.

Price, No. 100 each \$16.50

No. 1071-G Towel Baskets

Diameter of bars, % inch. Diameter of rings, ½ inch.





No. 15BT Bathroom Stools

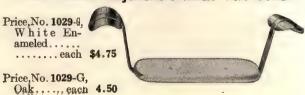


White enameled bathroom stool with cork seat and rubber tips. Height, 15 inches; diameter seat, 14 inches. Price, No. 15BT.....each

No. 1128-G Adjustable Bath Tub Seats



No. 1029-G Adjustable Bath Tub Seats



No. 1077-G Bath Room Shelves



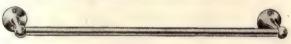
Size of Shelves .. 5x18 5x24in. 5x30 Price, Crystal, Nickel-Plated Brackets. ea. \$3.25 \$3.85 Price, Opaline, Nickel-Plated Brackets. ea. 3.55 3.95 4.45 Add for white finished brackets, 90 cents.

No. 1033-G Towel Bars



Length	in.	15	. 18	24	30
Price, 1/2-Inch Bar, Nickel-Pla	ted ea.	\$.90	\$1.00	\$1.20	\$1.45
Price, %-Inch Bar, Nickel-Pla	ted ea.	1.15	1.25	1.55	1.85
Price, 1/2-Inch Bar, White Fini	shedea.	1.20	1.35	1.65	2.00
Price, 5/8-Inch Bar, White Fin	ishedea.	1.50	1.65	2.10	2.65

No. 202 Towel Bars



With 1/2-Inch Bar			
Lengthinches	15	18	20
Price, N. P. Brasseach	\$1.40	1.45	1.50
Length inches	24	30	

Price, N. P. Brasseach	\$1.60	1.75	
With 5/8-Inch Bar			
Lengthnche	15	18	20
Price, N. P. Brasseach	\$1.50	\$1.60	\$1.65
" Crystal Glass Bar "	1.50	1.60	1.65
Opaline Bar	1.70	1.80	1.85
Length inches	24	30	36

	hinches			
Price,	N. P. Brasseach	\$1.75	\$1.90	\$2.05
66	Crystal Glass Bar "	1.75		
66	Opaline Bar	2.00	2.20	2.40

Opanic Dat	2.00		2.70
With 1-Inch Bar			
Lengthinches	15	18	20
Price, N. P. Brasseach	\$2.70	\$2.80	\$2.90
" Crystal Glass Bar " " Opaline Bar "	2.75	2.90	3.00
" Opaline Bar"	3.10	3.25	3.40
Lengthinches			
Price, N. P. Brasseach			
" Crystal Glass Bar"	3.15	3.45	3.75
" Opaline Bar"	3.65	4.05	4.45

No. 1201-G Toilet Paper Holders Lock Roll



Price, Nickel-plated Brass each \$2.7 "Escoloid White Finished Brass " 3.5	Price,	Nickel-plated Escoloid Whi	Brasste Finished	Brass	each	\$2.75 3.50
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Bath Room Hooks





	Nickel-	White
	Plated	Finish
Price, No. 1176-G, 334 Inches Higheach	\$ 70	\$1.00
Price, No. 1179-G, 4½ Inches Higheach	0.75	2 50
Trice, No. 1113-C, 472 menes riigheach	4.15	3.50

No. 1191-G Hook

For razor strop, hot water bag, etc. Price, No. 1191-G, Nickel-Plated, ...ea. \$.25 Price, No. 1191-G, White Finish., ...ea. .35

Tooth Brush Holders

No. 1141-G







Price, No. 1141-G Tumbler Holder and Tooth Brush Dise . . ezch \$1.50

Price, No. 1139-G Spreader, Perforated for Six Brushes with Glass Tumbler each \$1.15

Tooth Brush Holders





Price, No. 1138-G with Disc, Perforated for Six Brushes, N. P.ea. \$1.00

Price, No. 1136-G, Perforated for Six Brushes, N. P. ea. \$.65

Tumbler Holders No. 1146-G

Price, Nickel-plated Brasseach \$1.20

Price, Escoloid White Finished Brass.....each 1.60



No. 1236-G Spray Holders



No. 1114-G Soap Holders



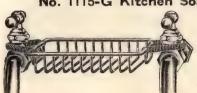
Size 2¾x4¾ inches. Price, N. P. . . each \$1.80 Price, White Finish.....each 2.25 Size 3½x5 inches. Price, N.P..each 2.25 Price, White Finish.....each 2.75

No. 1101-G Sponge and Soap Holders

Made of solid brass for rim of tub.

Price, No. 1101-G Nickel-Plated.....each \$3.00 Price, No. 1101-G White Finish..... each 4.00

No. 1115-G Kitchen Soap Holders



Price, 31/4x51/2 in-ches, Nickelplated ea. \$1.50

No. 5026-1 Bathroom Chairs



White enamel finish bathroom chair. Size of seat, $15\frac{1}{4}$ x $15\frac{1}{2}$ inches. Height of back, 18 inches. Weight, 11 pounds.

Price, No. 5026-1.....each \$6.00

Vitreous China Fixture Trimmings



Prices upon application.

Watrous Liquid Soap Holders



No. M-802

Fastens to wall or back of lavatory. A slight pressure of the hand upon a plunger underneath delivers into the hand just the quantity of soap needed and no more. The container may be easily refilled without removing from the bracket.

Price, No. M-802 each \$3.00



No. M-803



No. M-801

Fastens directly to wall or other support by means of a flexible wire. Fills through opening in top, having a hinged cover. All threaded joints and cement eliminated. Price, No. M-803.ea. \$3.40 Soap is delivered by pressing the push button at the top. A slight movement delivers a fixed quantity into the hand without drip or waste. Fills through the top by removing push button cap. Price, No. M-801 ea. \$5.00

No. C-866 Watrous Liquid Soap Valves



For attaching to top of lavatory.

This valve operates in an upright vertical position, being provided with shank to fit 1½-inch faucet hole in lavatory top.

Shank is fitted with a %-inch iron pipe coupling nipple and nut. Made of brass heavily nickel-plated.

When installed in the hole drilled for pop-up drain a chain stay can be furnished in the base of the soap valve at additional charge.

No. C-901 Watrous Liquid Soap Tanks



Made in two sizes: 3 and 5-gallon capacity.

Has gauge which drops when tank is 3/4 empty.

Made of black iron with welded seams and aluminum finish.

Suited to factory use.

Tapped 3/8-inch iron pipe.

Baker Vitreous China Escutcheons



No. 100

 Sizes, Iron Pipe
 inches
 3/8
 1/2
 3/4

 Price
 per dozen
 \$2.40
 2.40
 3.12



No. 200

Sizes, O. D. Tubing....inches 11/4 13/8 11/2 Price.....per dozen \$3.60 3.60 4.06

Nickel-plated Brass Escutcheons

No. 9280



01/ 1/4 42/	per Dian 100 In.	Size Inches	Price per 100
2½ ½ to 1½ 3 3 % " 1½ 3 3¾ 1½ " 2	$\begin{array}{ccc} \$5.00 & 21/2 \\ 6.00 & 3 \\ 7.00 & 3^{3/4} \end{array}$	1 " 2	\$5.00 6.00 7.00

No. 13006 Sure Grip Wrought Brass Flanges



No. 977 Slip Joint Waste Pipe Flanges

Iron Pipe	For O. D.	Price Nickel	Iron Pipe	For O. D.	Price Nickel-
Thread Inches		plated Each \$1.00	Thread Inches	Tubing Inches	Each Each
11/4	11/4	1.00	11/2	$1\frac{3}{8}$ $1\frac{1}{2}$	1.50

Plumbers' Seamless Brass Tubing

Nickel-Plated

		No. 342	200		
Size (nches 5/8 3/4 7/8 1 11/4 11/2 2	Actual Outside Diam. Inches . 654 . 768 . 875 1.000 1.245 1.508 1.756	Actual Inside Diam. Inches .521 .631 .728 .836 1.060 1.311 1.564	Weight Pounds per Lineal Foot .46 .56 .67 .88 1.27 1.55 1.82	Threads per Inch 20 20 18 18 18	Length of Thread Inches 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8

Prices will be quoted upon application.

Rubber Furnace Bulbs



PRICE-PER DOZEN
Bulbs Tubes
\$6.00 \$1.20

Blunt Edge Syphon Valve Washers

	140. 1002	*	
Size	Price	Size	Price
Inches	per Doz.	Inches	per Doz.
11/8	\$2.35	13/4	\$3.50
11/4	2.65	2	3.90
11/2	3.15		

High grade soft flexible stock. Carefully packed.

No. 8630 Beveled Syphon Rings



}	Size Inches	Price per Dozen	Size Inches	Price per Dozen
	1	\$1.40	13/4	\$2.60
	11/4	1.50	2	3.00
	172	2.00		

Packed 25 in box.

No. 832 Closet Spud Washers

Size Inches	Price per Dozen	Size Inches	
$\frac{1\frac{1}{4}}{1\frac{1}{4}}$	\$2.50	2	\$
11/2	3.00		



Price per Doz.

\$1.30

1.50

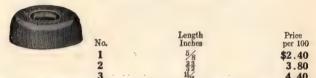
1.60

Rubber Tack and Screw Bumpers





No. 342 Recess Closet Seat Bumpers



No. 1801 Seat Rubbers No. 461 Bar Bumpers





No. 20
Made in white or red rubber.
Packed 1 dozen to the box.

Size....in. 2 21/4 21/2 Price..per doz. \$6.00 6.50 7.00 Size....in. 25/8 23/4 3 Price..per doz. \$8.10 9.20 10.80

Rubber Closet Connections



No. 8590 Rubber Straight Closet Connections

Size	Price	Size	Price
Inches	per Doz.	Inches	per Doz.
$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	\$7.00 9.00	2 .	\$14.00



Cone Washers

No. 200



For	High	Stem	Caps
-----	------	------	------

Size	Price	Sise	Price
Inches	per 100	Inches	per 100
3/8	\$2.65	3/4	\$3.80
3/8 1/2 5/8	3.00	1	4.70
5/8	3.35		

No. 240 Top Washers

For Compression Work



Price, %-inch Hole, \(\frac{12}{32}\)-inch Base, and \(\frac{13}{32}\) Inch High
Price, \(\frac{1}{2}\)-inch Hole, \(\frac{1}{30}\)-inch Base, and \(\frac{1}{4}\) Inch High
per hundred

2.00

No. 228 Jenkins Faucet Washers

Composition Rubber



Prepared to fulfill the severe conditions of hot and cold water service. Ordinarily supplied in the medium hard grade. Made also of extra hard composition for use in hospitals, hotels or wherever hot or high pressures may be encountered. Made in sizes 38, 1/2, 3/8 and 1 inch. Special sizes can be made to order. Packed in boxes of 100 each.

Price, No. 228.....per 100 \$2.75

No. 8356 Beveled Waste and Overflow Washers

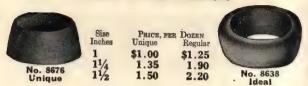


Price.....per dozen \$1.20

Rubber Slip Joint Washers

			ain		
Plain	Size Inches	Price	Size	Price	Beveled
	3/	per 100 \$.75	Inches	per 100	
	78		11/4	\$1.30	
	2/2	.80	11/2	1.65	
	- 1/4	.95	2	2.55	
No. 3501	T	1.15			No 551
		Bevele			
Price, 3/8-inch I. D.					00 co 001 ro
					CI TOU \$2.00

Basin Waste Washers



Basin and Sink Gaskets



Price, Basin per dozen \$1.20 " Sink " 2.80



No. 4213 Rubber Stoppers



Special Rubber Stoppers

Diamond Reversible Toggle Bolts



For making attachments to hollow brick, tile or lathe walls. Heads are removable and can be placed at either end of stove bolt. Loose heads furnished with threaded rods.

	PRICE, PER 100					
C 99	With Round			Brass		
Size	or Flat	WITH		Toggle		
Screw Inches	Head Stove	Plain	Nickel-	Brass		
	Bolts	Brass	plated	Bolts		
1/8 or 3/16x3	\$9.00	\$10.00	\$12.00	\$22.00		
1/8 " 3/16X31/2	9.40	10.40	12.40	22.60		
1/8 " 3/16X4	10.00	10.80	12.80	23.10		
$\frac{3}{16}$ x5	10.40	11.60	13.60	24.20		
3/16×6	11.40	12.40	14.40	25.30		
1/4x3	12.20	13.20	15.60	24.40		
1/4×31/2	13.00	14.00	16.40	25.20		
1/4×4	13.80	14.80	17.20	26.00		
1/4×5	15.80	16.80	19.20	27.60		
1/4×6	17.00	19.20	21.60	29.20		
5/16x3	13.20	21.20	24.40	40.00		
5/16X4	14.80	22.80	26.00	50.00		
5/16×5	16.80	24.80	28.00	60.00		
5/16×6	18.00	27.20	30.40			
/10	20.00	21.20	30.40	70.00		

No. 3880 Plain Brass Fuller Handles



Price, No. 3880, Finished or Nickel-Plated each \$.40

No. 3885 Indexed China Fuller Handles



Price, No. 3885, Finished or Nickel-plated...per doz. \$13.80 No. 105 Fuller Adjustable Stems

Size of Bibb	inches	\$.40	3/4 .45
These stems fit any style or size of	f Fuller hib	h	

Fuller Eccentrics No. 3872

Size of Bibbinches Price, Plaineach "Nickel-plated, for Basin and Bath	1/ ₂ \$.25	3/4 \$.35
Cockseach	.35	

		Fuller	Repairs		
			PRICE, PER DOI No. 98	EN-	
1	Size	No. 97	Stem	No. 99	
Cap	Inches	Cap ·	Nut	Screv	Stem
	1/2	\$.40	\$.30	\$.25	Nut
	3/4	.60	.40	.2	
To the same	Size		103 STEM PACKIN		-30
	Inches	Comp.	Lead	Brass	" Daaran an
Stem	1/2	\$.75	\$.30	\$.50	MANAGEMENT
Packing	3/4	.75	.30	.50	Screw

Bibb Washers, Discs and Fuller Balls

No. 1051 Bibb Washer	Ru	303, Soubber Di	SC	(F	No. 107	
	Bib	b Wasl	hers		-	
Size	inches	3/8	1/2	5/6	3/4	1
Price, Hard or Soft		\$1 30	1 30	1.30	1.50	2.00
" Jenkins H		42.00	00	2.00	2.00	2.00
		1 50	1.50	1.50	1.50	1 50
Soft						1.50
Price, Red Fibre		. 60	. 60	. 60	. 60	1.00
" Leather	44	.50	.50	. 50	. 50	.80
	Solid I	Rubber	Dises			
Size					3/	1
Deige	100	81 80	2 20	78	1.70	3.00
Price				1.60	1.70	1.80
		ller Ba	alis			
Size	ir	ches	1/2	5/8	3/4	1
Price, Soft					2.90	5.00
" Hard		"	4 00	4 00	5.80	10 00

No. 5525 Union Washers

	Size Inches	Fibre	PRICE, PER 100- Paper	Leather
	3/8	\$1.00 1.40	\$.25 .35	\$.25
market and the second	3/4	1.60	.40	.35
	11/4	1.75 2.70	. 45 . 55	.45 .65
	1½ 2	3.00 4.10	. 65 . 75	1.20

Compression Brass Handles Finished or Nickel-plated







Compression Brass ee Handle No. 3890



Compression Brass Cross Handle No. 3894

Price, Wheel Handle ...per doz. \$4.80 \$5.40 \$6.60 \$27.00

"Tee Handle ... "

2.40 2.40 2.00

Cross Handle

Price....per dozen \$5.40

China Lever Handles

No. 1033

No. 1033 is for all side handle lavatory and bath

Price, No. 1033.....each \$1.15

No. 1034



No. 1034 is for sink faucet top handle lavatory faucet and front handle bath faucet.

Price, No. 1034.....each \$1.15

No. 1033



For sink fixtures and top handle bath faucets. Price, No. 1035.....each \$1.15

No. 1036 Brass Lever Handles



For finished and nickel-plated faucets.

Price, No. 1036, Fin. or N. P. each \$.40

No. 1038 Brass Tee Handles



For finished and nickel-plated faucets.

2. 02	THE PARTY OF PERCENT	pratou radous	
Faucet	Price, Each	Faucet	
Inches	Fin. or N. P.	Inches	
1/2	\$.20	3/4	

Compression Cross Handles

Indexed



Four-arm China Index No. 3895



Price, Each Fin. or N. P. \$.25

Solid China Indexed No. 3898

Size	Small	Large
Price, Four-arm Nickel-plated each	\$.95	\$1.25
" Solid China"	1.45	1.95

Compression Stops



For Iron Pipe With Stuffing Box

Tee Handle



a design policy and dispersion below them.	

	_		
No. 3453,	Straight		No. 3452, Anale
Size		PRICE, EACH -	
Inches	Rough	Finished	N. P.
3/8	\$1.55	\$1.70	\$2.00
1/2 5/8 3/4	1.85	2.65	2.35
5/8	2.35	2.55	2.85
3/4	3.05	3.25	3.60
1	5.40	5.90	6.40

No. 185E6 Compression Stop and Drains With Stuffing Box



Side cap waste control compression stop with waste. Bonnet with asbestos ring packing. Encased seat washers.

Furnished with 1 waste control and packed 3 right and 3 left in a carton.

G:	Th. 1	and a	
Size	Price	Size	Price
In.	Each	In.	Each
1/2	\$2.45	3/4	\$3.65
1/2 5/8	2.95	1	6.40

No. 175E2 Haysco Compression Reversible Stop and Drains



Size In.	Price Rough Each	Size In.	Price Rough Each
1/2 5/6	\$2.70	134	\$3.90 7.00

Compression Urinal Faucets

For Iron Pipe

PRICE EACH Fin. N. P.



Size Inches
1/2
Size

½ \$2.25 \$2.55 S. O. T.

Size PRICE, EACH Inches Fin. N. P. 1/2 \$2.25 \$2.55



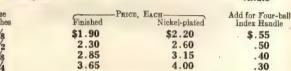


Compression Lavatory
Stops

Iron Pipe Thread Both Ends Wheel Handle

With Stuffing Box





No. 3468



No. 3476 Straight

_			2 11 194 10
Size		PRICE.	EACH
Inches	Finished		Nickel-plated
3/8	\$2.10		\$2.40
1/2	2.50		2.80
5/8	3.05		3.35
3/8 1/2 5/8 3/4	3.85		4.20

No. 2516 Angle Pattern Lawn Faucets



Size	inches	1/2-3/4
Price,	Rough Nickel-plated each Finished each	\$2.80
и	Nickel-platedeach	3.15

Miami Anti-freeze Lawn Faucets



A new and inexpensive design for outside hose connection. can be used in the winter time and does not require a stop and waste. Seat can be renewed from the outside. Valve closes and drains outside, preventing wetting of cellar floor. Furnished with tight and loose key.

Sizeinches	1/2	3/4
Price, with 9 inch Connecting Pipeeach	\$3.50	\$3.75
Price, with 12-Inch Connecting Pipeeach	3.75	4.00
Price, with 18-Inch Connecting Pipeeach	4.75	5.00
Price, with 24-Inch Connecting Pipe each	5.00	5.25

No. 3000 Compression Plain Faucets For Iron Pipe



Sizeinches Price, Rougheach	3/8	1/2	3/4	1	11/4
Price, Rough each	\$1.40	\$1.45	\$1.90	\$4.50	\$8.90
" Fin	1.55	1.65	2.10	5.00	9.50
" Nickel-plated . "	1.85	1.95	2.40	5.50	10.40
Add for S. Box "		.40	.45	.90	1.55
" " China Indexed					
Handleseach		.75	.70		

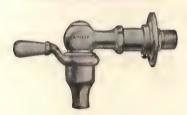
No. 3001 Compression Hose Faucets For Iron Pipe



Sizeinches	1/2	3/4	1	11/4
Price, Rough each	\$1.70	\$2.15	\$5.10	\$9.80
" Finished "	1.90			
" Nickel-plated "	2.20	2.65	6.10	11.30
Add for Stuffing Box "	.40	.45	.90	1.55
" " China Ind. Hdles. "	. 75	. 70		

No. J-8 Sanitap Bibbs

With Set Screw Flange



Size Inches	Fin. China	HANDLES - PRICE,	Fin. BRASS	HANDLES N. P.
1/ ₂	\$4.60	\$4.90	\$4.35	\$4.65
5/ ₈	5.15	5.45	4.90	5.20

No. 72 Quick Compression Factory Wash Sink Faucets

Quick compression factory wash sink double faucet with removable spray spout, brass lever handles and male union couplings for ½-inch iron pipe.

Body rough brass, plated all over.

The supply inlets are arranged for cold water above and hot water below.



Price,	No. 72	with	Spray	Spouteach \$	7.50
Price.	No. 72	with	Plain	Spouteach	6.50

COLD

Quick Compression Faucets

No. 3101 China Handle for Iron Pipe

	Plain Bibbs		
Sizo	inches	1/2	\$2.75
Dries.	Finishedeach	\$2.30	\$2.75
rice,	Nickel-plated each	2 60	3.05
••	Nickel-plated	2.00	3.00
	Hose Bibbs		
Size	Finished inches each	1/2	3/4
Price.	Finished each	\$2.55	\$3.00
4	Nickel-plated each	2.85	3.30

No. 3109 Quick Compression Faucets

With Solid Female Flange and China Handle



Size		inche	c 14	3/
Price, Plain	Bibbs.	Finished	h 62 80	\$2 25
**	44	Nickel-plated"	3.10	3.65
" Hose	***	rinished "	3 05	3.60
76 117 72	41	Nickel-plated "	3.35	3.90
II with B	rass Ha	indles, deduct "	.50	.50

No. 3121 Quick Compression Faucets With Adjustable Extension Flange, for Iron Pipe



			-PRICE, EACH-		
Size		NA HANDLES		S HANDLYS	Add for
In.	Fin.	N. P.	Fin.	N. P.	Hose End
$\frac{1}{2}$ $\frac{3}{4}$	\$3.35	\$3.65	\$2.85	\$3.85	\$.25
37	4.05			T	4
74	4.05	4.35	3.55	3.15	.25

Quick Compression Faucets

No. 3117 China Handle S. O. T. Set Screw Flange



	Plain Bibbs		
Size	inches	1/2	3/4
Price.	Finished each	\$3.10	\$3.65
46	Nickel-plated "	3.40	3.95
	Hose Bibbs		
	inches		3/4
Price,	Finished each	\$3.35	\$3.90
66	Nickel-plated	3.65	4.20

No. 3200 Fuller Plain Faucets

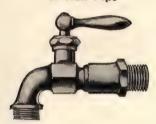
For Iron Pipe



Size. inches Price, Finished each	\$1.95	3/ ₄ \$2.30
" Nickel-plated	2.35	2.70

No. 3201 Fuller Hose Faucets

For Iron Pipe



Sizeinches Price, Finishedeach	1/2	3/4
" Nickel-plated	\$2.25	\$2.60
Attorict-planed	4.00	3.00

No. 3206 Fuller Plain Faucets With Solid Female Flange



Size	inches	1/2	3/4
Price, No. 3	inches	\$2.45	\$2.90
	3206 Nickel-plated	2.85	3.30
Add for I	Male Flange"	.15	.15
" " I	Hose End	.30	.30

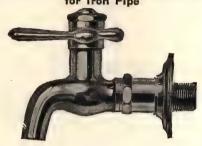
No. 3226 Plain Fuller Faucets With Extension Flange



Size inches Price, No. 3226 Finished each	\$3.05	3/4 \$3.65
Price, No. 3226 Finishedeach " 3226 Nickel-plated"	3.45	4.05
Add for Hose Fnd	.30	.30

No. C-7900 Fulcrum Handle Self-closing Faucets

Adjustable Screw Flange, Detachable Shank for Iron Pipe



Size			inches	1/5	3/4
Price, No.	7900. Nickel	l-plated	each	\$4 35	4 66

Doherty Self-closing Faucets

With Extension Flange



Sizein	ches ½	3/4
Price, Finished	each \$4.00	\$4.80

Auto Radiator Filling Faucets



Nickel on rough self-closing Auto Radiator Filling Faucet with fulcrum handle and ¾-inch female hose thread to fit water hose.

Self-Closing Stops for Iron Pipe







No. 3492 Doherty

Size		inc	hes	3/2	1/2	5/6	3/4
Price,	Boston,	Finished e	ach	\$2.45	\$2.55	\$3.10	\$3.95
"	"	Nickel-Plated	66	2.95	3.05	3.60	4.60
"	Doherty	, Finished	66			3.50	
66		Nickel-Plated				4.00	

No. 4070 Corporation Stops With Straight or Bent Coupling



	I RI	With		Price
Size Inches	As Shown	Hexagon on Main End	Size Inches	Each As Shown
1/2 5/8 3/4	\$1.60 2.25	\$1.75 2.50	1 ¹ / ₄ 1 ¹ / ₂	\$10.00 16.00
3/4	2.85 4.50	3.20 5.00	2	26.50
•	4.00	3.00	* * *	

No. 4071 Corporation Stops

Screw Plug, without Coupling



	Praci	, EACH		
		With		Price
		Hexagon		Each
Size	As	on	Size	8.6
Inches	Shown	Main End	Inches	Shown
1/2	\$1.45	\$1.60	11/4	\$9.25
1/2 5/8	1.95	2.20	$1\frac{1}{2}$	15.00
3/4	2.50	2.85	2	25.00
1	4.00	4.50		

No. 119E1 Lead Goose Necks With Wiped Joint Ends and Solder Nipples



Size In.	Lgth. L. P. In.	With	Each Without	Size	Lgth. L. P.	PRICE, With	Without
		Corp. Stop		In.	In.	Corp. Stop	Corp. Stop
1/8	18	\$4.50	\$3.90	11/	18	\$10.75	\$9.20
7/2	18 18	5.25	4.60	$\frac{11/4}{11/2}$	24	19.50	16.20
3/8 1/2 5/8 3/4	18	6.25 7.25	5.40 6.25	2 2	30 36	31.00 48.50	25.50 38.50

Lead Flange Union Couplings

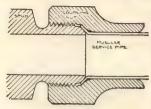
No. 4086, Lead to Lead No. 4085, Lead to Iron





Size	Price	Size	Price	Size	Price	Size	Price
In.	Each	In.	Each	In.	Each	In.	Each
1/2	\$.85	11/4	\$3.80	1/2	\$1.75	11/4	\$7.50
1/2 5/8 3/4	1.30	11/2	5.00	1/2 5/8 3/4	2.50	11/2	9.25
3/4	1.50	2	7.50	3/4	2.95	2 1	14.25
1	2.00			1	3.90		

Mueller Service Pipe



Made of pure copper, fabricated, tempered and carefully treated to meet the exacting requirements of service pipe installations, this pipe is flexible and elastic enough to withstand changing soil or construction conditions.

Mueller Service Pipe has a minimum tensile strength of

30000 pounds per square inch and a minimum elongation of 25 per cent in 4 inches.

An easy pipe to install. A perfect joint can be made with the following tools: Hack saw, knife or reamer, Mueller flanging tool and a hammer.

The illustration shows the use of the coupling nut and spud in forming a joint with Mueller Service Pipe. Both nut and spud present convex surfaces on the flanged portion of the pipe, forming a line contact and making a perfect joint which

will withstand terrific lateral pulling.

Furnished in lengths of 16, 18 and 20 feet. Sizes which are to be recommended as substitutes for iron pipe size pipe from

12 00	W-THORT T	TECTORST A C	BILL SE	TOTTOWS.			
I.P.			Test	I.P.			Test
Size	O. D.	Gauge	Pressure	Size	O. D.	Gauge	Pressure
In.	In.	B.G.W.	Pounds	In.	In.	B.G.W.	Pounds
4.7	W 4					20.01.11.	T OWNER
$\frac{1}{2}$	5/8	18	1140	11/4	13/6	16	630
3/4	7%	16	1040	11%	15%	15	580
4 2 38	-49			1/2	1/8		
T	11/8	16	780	2	$2\frac{1}{8}$	14	520
Pri	bre sen	gnagial	bullatin	unon room	o a t		0=0

Mueller Service Pipe Fittings

These fittings are made of high grade copper content red brass, with just enough of the harder metals mixed with copper so that it can be machined. All are tested under an actual hydraulic pressure of 200 pounds.

No. G-15000 Corporation Stops

Inlet: Mueller thread. Outlet: Mueller service pipe same size as corporation stop except 5/8-inch size which is for 34-inch.

Sizes: ½, ½, ¾, ¾, 1, 1¼,
1½ and 2-inch.
Inside thread screw

plug is required.

No. G-15025 Corporation Stops

Inlet: Iron pipe thread. Outlet: Mueller service pipe same size as corporation stop. Sizes: ½, ¾, 1, 1¼, 1½ and 2-inch. Inside thread screw plug required.

No. G-15450 Couplings



Copper pipe to iron pipe, inside thread. Can be used on outlet of any corporation stop having iron pipe thread outlet, same size as corporation stop.

Sizes: ½, ¾, 1, 1¼, 1½ and 2-inch.

No. G-15425 Couplings

Copper pipe to iron pipe, outside thread. Size denotes

service pipe size, also iron pipe size. Sizes: ½, ¾, 1, 1¼, 1½ and 2-inch.

Prices upon application.

Mueller Copper Service Pipe Tools

No. G-18025 Copper Hammer

Price, No. G-18025...each





No. G-180	ו טטו	langin	ig To	ol
Size	.in.	1/2	3/4	1
Price	.ea.			
Size	.in.	11/4	$1\frac{1}{2}$	2
Price	ea.			

Screw Plugs for Mueller Tapping Machine

Furnished for Nos. A, B, 1 and 2 machines.

No.	Size Inches	Price Each	No.	Size Inches	Price Each
62551	1/2		63146	11/4	
62553	3/4		62981	11/2	
62554	1		62980	2	



Tee Handle Flat Way Stops

Ground Key—For Lead Pipe
No. 3966 Stop
No. 3967 Stop and Drain



Size	Price	Size	Price	Size	Price .	Size	Price
In.	Each	in.	Each	In.	Each	In.	Each
1/2 5/8 3/4	\$1.95	11/4	\$8.35	1/2	\$2.00	11/4	\$8.50
5/8	2.75	$1\frac{1}{2}$	13.95	5/8	2.80	11/2	14.20
3/4	3.40	2	24.00	3/4	3.45	2	24.50
1	5.00			1	5.10		

Tee Handle Round Way Stops Ground Key-For Lead Pipe



Stops and Stop and Drains

Tee Handle—Round Way—For Iron Pipe No. 3982 Stop No. 3983 Stop and Drain





Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	i i ie In.	Price Each
1/2	\$2.20	11/4	\$10.05	1/2	\$2.25	11/4	\$10.20
1/2 5/8 3/4	3.00 3.85	$\frac{11/2}{2}$	16.45 28.50	5/8 3/4	3.05 3.90	$\frac{11/2}{2}$	16.70 29.00
1	6.15	1.4.1		1	6.25		

Stops and Stop and Drains

Tee Handle—Flat Way—For Iron Pipe No. 3954 Stop No. 3955 Stop and Drain





Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
3/8 1/2 5/8 3/4	\$1.70 1.75	1 11/4	\$4.40 7.45	3/8 1/2	\$1.75 1.80	1	\$4.50 7.60
5/8 3/4	2.45 3.00	$\frac{11/2}{2}$	12.45 21.50	5/8 3/4	2.50 3.05	$\frac{11/4}{11/2}$	12.70 22.00

Patent Guard Round Way Stops

Ground Key for Iron Pipe Tee or Lever Handle

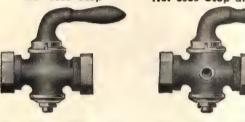
No. 4049 Stop

No. 4050 Stop and Drain

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	
1/2 5/8 3/4	\$2.20	$\frac{11/4}{11/2}$	\$10.05 16.45	1/2 5/8 3/4	\$2.25 3.05	$\frac{11/4}{11/2}$	\$10.20	
3/4	3.85	2	28.50	3/4	3.90	2	20.00	

Stops and Stop and Drains

Lever Handle—Round Way—For Iron Pipe
No. 3988 Stop No. 3989 Stop and Drain



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2 5/8 3/4	\$2.20	11/4	\$10.05	1/2	\$2.25	11/4	\$10.20
5/8	3.00	11/2	16.45	5/8	3.05	11/2	16.70
3/4	3.85	2	28.50	3/4	3.90	2	29.00
1	6.15	177		1	6.25		

Inverted Key Curb Stops



Minneapolis Pattern for Iron Pipe Tee or Socket Head Round Way



No. 4062 Stop and Drain

 Size....is.
 1/2
 5/8
 3/4
 1
 11/4
 11/2
 2

 Stop...each and Drain..each
 \$3.35
 \$4.25
 \$5.40
 \$8.05
 \$13.05
 \$20.95
 \$35.50

 3.40
 4.30
 5.45
 8.15
 13.20
 21.20
 36.00

Inverted Key Curb Stops



Regular Pattern For Iron Pipe Tee or Socket Head, Round Way



No. 4056 Stop and Drain

Size...in. ½ 5% 34 1 1½ 2 2 Stop.each \$2.95 \$3.80 \$4.90 \$7.40 \$12.05 \$19.45 \$33.00 a n d Drain...each 3.00 3.85 4.95 7.50 12.20 19.70 33.50

No. 101E1 Ground Key Plain Faucets For Iron Pipe



Size	P	RICE, EACH		Size		PRICE, EACH	
In.	Rough	Fin.	N. P.	In.	Rough	Fin.	N. P.
1/4	\$1.65	\$2.05	\$2.45	1	\$4.40	\$5.40	\$6.40
3/8	1.70	2.10	2.50	11/4	7.45	8.95	10.45
1/4 3/8 1/2 5/8 3/4	1.75	2.15	2.55	11/2	12.45	14.95	17.45
5/8	2.45	2.95	3.45	2	21.50	25.00	28.50
3/4	3.00	3.75	4.50				

No. 101E2 Ground Key Hose Faucets For Iron Pipe



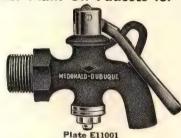
Size	P		H	Size	P	RICE, EACH	
In.	Rough	Fin.	N.P.	In.	Rough	Fin.	N.P.
1/2	\$2.00	\$2.40	\$2.80	11/4	\$8.35	\$9.85	\$11.35
1/2 5/8 3/4	2.70	3.20	3.70		13.70	16.20	18.70
3/4	3.25	4.00	4.75	2	23.35	26.85	30.35
1	5.00	6.00	7.00				

McDonald Oil Faucets

For Steel Oil Barrels and Drums

McDonald Oil Faucets are made from a good grade of Brass, carefully machined and perfectly ground. They are made for use with gasoline or other liquid petroleum products; fitted to withstand the action of such oils without leakage. All are Guaranteed unreservedly.

Lock Lever Plain Oil Faucets for Iron Pipe



Size.....inches 1½ 5/8 x 3/4 1 11/4 11/2 Price, Rough..ea. \$1.75 2.45 3.00 4.40 7.45 12.45

Lock Lever Hose Oil Faucets for Iron Pipe



Size.....inches 1/2 5/8 x 3/4 3/4 1 11/4 11/2 Price, Rough. ea. \$2.00 2.70 3.25 5.00 8.35 13.70

Mbel cert

Mueller Brass Ferrules Straight, Long Pattern

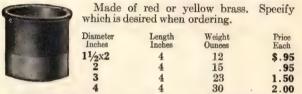
	No.	8800, H.S.	No. 881	0, H.X.
Size	Lgth.	Price	Lgth.	Price
In.	In.	Each	In.	Each
2	$4\frac{1}{2}$	\$.90	41/8	\$1.10
3	. 43/4	1.50	41/4	1.85
4	5	1.85	45/8	2.30
4	5	1.85	45/8	

Mueller Brass Ferrules

Long Offset, Reducing Pattern

	No. 13	73, H. S.	No. 13	75, H. X.	
Size In.	Lgth.	Price	Lgth.	Price	
In.	In.	Each	In.	Each	
$2 \times 1^{1/4}$	43/8	1.10	$5\frac{1}{8}$	\$1.30	
$2 \times 1 \frac{1}{2}$	41/4	1.10	5	1.30	

No. 4273 Straight Brass Ferrules



No. 4283 Brass Trap Screw Ferrules

Size In.	FOR STAN	PRICE, PR	FOR Ex. Std. Wt.	HEAVY PIPE Heavy Wt.	
2	\$14.40	\$16.20	\$16.80	\$18.60	1 - 2
3	24.00	26.40	28.20	30.60	
4	31.20	34.80	36.00	40.20	
5		147.00		156.00	
6		168.00		177.00	

No. K-1552 Blake Extra Heavy Iron Cleanouts

For Extra Heavy Pipe Only
With Full 3½-Inch Opening Extra Heavy
Iron Pipe Size Brass Plug

The body and cover are made extra heavy and opening is large enough to permit test plugs to be inserted.



With Raised Head

Size Price, No. K-1552	.inches	\$.65	.95	4 1.20	5 2.25	6 3.20
With	Counte	rsunk	Hea	d		
Size						6
Price No K-1552	each !	\$ 75 1	05	1 35	2 50	3 50

Blake Standard Iron Body Cleanouts

Heavy Brass Screw Cover with Square Head

Taper Screw Plug Cover Flanged Screw Cover





	Body	Cover	Price		Body	Cover	Price	
No.	In.	In.	Each	No.	In.	In.	Each	
K-1574	2	11/2	\$.40	K-1574	2	$1\frac{1}{2}$	\$.45	
K-1574	3	$2\frac{1}{2}$. 65	K-1574	3	$2\frac{1}{2}$.70	
K-1574	4	3	.70	K-1574	4	3	. 80	
K-1574	5	$3\frac{1}{2}$	1.55	K-1574	5	31/2	1.80	
K-1574	6	4	2.10	K-1574	6	4	2.40	
K-1574	8	4	3.40	K-1574	8	4	3.80	

No. 1111 Iron Drive Ferrules



No. 1111A 1111B	Size Inches 4	Depth Inches 11/2 21/4	Price Each \$.20
1111C	4	31/2	.25

No. G10026 Mueller Soldering Nipples



Lead Pipe

Aqueduct

1	m	Co	11	



On Reels

Size Inches	Price Each	Size Inches	Price Each	Committee of the commit
3/8	\$.30	11/2	\$1.25	
1/2	.35	2	1.75	William Barrier
1 3/4	. 50 . 70	$\frac{21/_{2}}{3}$	3.00 4.00	CHILDS 5
11/4	90	4	7 00	

No. G10027 Mueller Soldering Nipples

Size	Price	Size	Price
In. 1/0	Each \$.30	In. 11/4	Each \$. 90
1/4	.30	11/2	1.25
3/8	.30	2	1.75
3/.	.35	$\frac{2^{1/2}}{3}$	3.00 4.00
1 4	.70	4	7.00



Soldering Unions

Size	PRICE, P	ER DOZEN-
In.	Straight, No. 4250	Bent, No. 4251
3/8	\$4.80	\$7.20
1/2	6.00	8.40
1/2 3/4	7.80	9.60
1	10.20	12.00
11/4	13.20	16.20
11/2	15.00	22.80
2	21.00	30.00



No. 573 Flush Bushings



I. P.	O. D.	
Thread	Tube	Price
Inches	Inches	Each
11/4	$1\frac{1}{4}$	\$.17
11/4	$1\frac{3}{8}$. 15
11/2	$1\frac{1}{4}$.27
11/2	$1\frac{3}{8}$.25
11/2	$1\frac{1}{2}$.20
11/6	156	.17

No. 297 Brass Solder Bushings With Female Iron Pipe Thread

						10
L.P.	O. D.		I. P.	O. D.		
Thread	Tubing	Price	Thread	Tubing	Price	
Inches	Inches	Each	Inches	Inches	Each	
11/4	11/4	\$.48	11/2	15/8	\$.64	
11/4	13/8	.48	2	$1\frac{1}{2}$	1.50	
11/2	11/4	.72	2	15/8	1.50	
11/2	13/8	.72	2	2	1.40	
11/2	11/2	. 64				



Brass Vent Tees With Slip Joint Nuts and Washers Iron Pipe Vent—Lead Pipe Waste

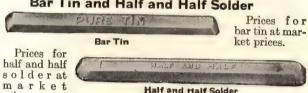
					· fa · · ·	
_				ULAR		Long
Iron	Lead	Slip	PATTERN		PATTERN	
Pipe	Pipe	Joint		Price		Price
In.	In.	I_{n} .	No.	Each.	No.	Each
$1\frac{1}{4}$	11/4	11/4	900	\$.90	901	\$1.04
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$	906	1.07	907	1.20
$1\frac{1}{2}$	11/2	11/2	912	1.11	913	1.26

Inside		GBT	Length	Inside	-WEI	Chrm.	Lanath	
Inside Caliber	PER]	FOOT	Length of Coil	Caliber	PER	Foor	Length of Coil	
In.	Lbs.	Oz.	Feet	Inches	Lbs.	Oz.	Feet	
3/6		Q	175	13/4		Oa.	100	
12		$\frac{8}{10}$	140	174	3	* * *	* *	
72		10		2	3	* * .	ii	
8	* * * *	12	100	$2\frac{1}{4}$	3	$7\frac{1}{2}$		
2/4	1		85	$\frac{2}{2}^{1/4}$ $\frac{2}{2}^{1/2}$	4		$\dot{1}\dot{2}$	
7/8	1	8	55	3	4		12	
1	1	8	55	31/2	-	* *	12	
11/	2	0	50	4/2	1 2		12	
$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	3	* *	90	41.4	5 8	* *	12	
172	o		34	41/2	8	4	12	
			Extra	Light				
3/6		9	155	13/	3	12	40	
12		19	235	$\frac{1\sqrt{3}}{2}$	4	14		
5%	1	$\begin{array}{c} 12 \\ 4 \end{array}$	140	21/		* *	40	
28	Ţ	4		21/2 3 31/2	5			
%4	Ţ	8	115	3	4	12	12	
7/8	1 2 2 2 3		85	31/2	5		$\begin{array}{c} 12 \\ 12 \end{array}$	
1	2		85	4	6	• •	12	
11/	2	8	70	41/2	· ·	• •	14	
$\frac{1}{1}\frac{1}{4}$ $\frac{1}{2}$	5	8	42	472		0.0		
172	3	0	_					
			Lig!	nt '				
3/6		12	235	$1\frac{3}{4}$ 2 $2\frac{1}{2}$ 3 $3\frac{1}{2}$	4	Q	35	
1%	1		175	5/4	5	0	30	
5%	1	12	100	21/	9		30	
/8	1		100	2/2	6		12	
24	1 2 2 2 2 3		85	3	6	3	$\begin{array}{c} 12 \\ 12 \end{array}$	
/8	2	8	40	$3\frac{1}{2}$				
1	2	8	70	4	8		12	
$\frac{1}{1}\frac{1}{4}$ $\frac{1}{2}$	3		55.	41%	Ų.	* *	14	
112	4		40	1/2			* *	
1/2	-36	• •		* * *			* *	
			Medi	um				
3/8	1		175	13/	5	8	28	
1/2	1 .	4	140	2 4	7		กก	
5%	9	-	85	$ \begin{array}{c} 1\frac{3}{4} \\ 2 \\ 2\frac{1}{2} \\ 3 \\ \end{array} $	8	* *	22 12	
38	5			272	0	0.0	12	
24	2	4	75	3	9	* *	12	
1/8	3	* *	58	31/2				
1	3	4	53	4	10		12	
11/4	1 2 2 3 3	12	48	41/2			-0.1	
$1\frac{1}{4}$ $1\frac{1}{2}$	5		32	-/4	* *	* *	• •	
-/2	•						• •	
			Stro	ng				
3/8	1	8	120	13/4	6	8	23	
1/2	$\frac{1}{2}$	$\frac{12}{8}$	115	$\frac{2}{2}\frac{1}{2}$	8		18	
5/8 3/4	2	8	80	21/6	11 .	• •	19	
3/	3	_	67	2 2	10	* *	$\begin{array}{c} 12 \\ 12 \end{array}$	
72	3		48	31/2	12 15		12	
1/8	4	0			19		12	
1	4	::	50	4	16		12	
$1\frac{1}{4}$ $1\frac{1}{2}$	4	12	35	41/2				
11/2	6		36					
				trong		• •		
3/	9		CXCIA 3	trong	0			
18	2 2 3 3	٠.	90	$1\frac{3}{4}$	8		20	
1/2	2	8	70	2 ¹ / ₂ 2 ¹ / ₂ 3	9		16	
5/8	3		58	$2\frac{1}{2}$	14		12	
3/4	3	8	48	3	16		19	
7%				31/6	18	* * .	10	
10	4	19	35	1	22	* *	$12 \\ 12 \\ 12 \\ 12$	
11/	6	14		417	22	• •	12	
11/4	0	* 1	28	4/2	0.4	* *	4.9	
1/2	7	8	20	4 4 4				
Double Extra Strong								
% 2 10 134								
12	9	10	60	9/4	10	* *		
72	$\frac{2}{3}$		60	21/	10	8	15	
8	3	8	50	2½ 2½ 3 3½	17		15 12 12	
3/4	4		44	3	20		12	
7/8				31/2				
1	5	8	30	4	25		10	



Weight	-APPRO	EMATE THE	CK NEAS-	AVERA	SE SIZE OF	Average Weight
per		Nearest	Birminghan		SHEET	· per
Square Foot	Decimals	Fraction	Gauge	Width	Length	Roll
Pounds	Inches	Inches	Number	Ft. In.	Feet	Pounds
$1\frac{1}{2}$.	.0255	3/128	23	7-4	18	225
2	. 0340	32	20	7-6	18	270
$2\frac{1}{2}$.0425	5/128	19	8-3	19	390
3	.0510	3 64	18	8-3	19	475
$3\frac{1}{2}$. 0595	7/128	17	8-3	19	560
4	.0680	1/16	16	8-6	20	
5		7,16		-		680
_	. 0850	6.4	14	8-6	20	850
6	.1010	64	12	8-9	22	1050
7	.1180	15/128	11	8-9	22	1300
8	.1350	1/8	10	8-9	25	1600

Bar Tin and Half and Half Solder



Bar Wiping Solder



Prices for Bar Wiping Solder at market prices.

Pig Lead



Prices for pig lead at market rates.

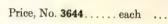
prices.

No. 6 Combination Lead Ferrules

		-		"FRIUE, LACE		
		11/4-in.	1½-in.	2-in,	3-in.	4-in.
		for	for	for	for	for
	Lgth.	2-in.	2-in.	2-in.	3-in.	4-in.
	In.	C.I. Pipe	C.I. Pipe	C.I. Pipe	C.I. Pipe	C.I. Pipe
-	4			\$.28	\$.42	\$.50
	$4^{1/2}$	\$.28	\$.28			4.00
	5	.36	.36	4.0		
				.41	.60	.72
Page 1	6	.43	.43	.46	.67	.85
	8	.51	.51	.57	.82	1.02
3 5	10	. 60	. 60	.67	.98	1.25
	12	.67	. 67	.76	1.10	1.40
	14		.80	.80	1.15	1.60
	16		.90	.86	1.22	1.73
	18		1.00	.92	1.30	1.85
	20		1.10	1.00	1.40	2.10
	24		1.30	1.15	1.60	2.30
	30			1.40	2.00	2.75
	36			1.65	2.30	3.25
						_

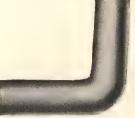
No. 3644 Spun Brass Drum Trap Covers

Nickel-plated brass trap cover; diameter 6 inches, height 1%





Lead Bends





No. 1 Long Inlet

No. 2 Short Inlet

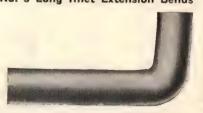
	Standard							
	Weight		G INLET B	ENDS-		RT INLET B	ENDS	
Size	per Foot		TO END	Price		n., ln. To End	Price	
In.	Pounds	Inlet	Outlet	Each	Inlet	Outlet	Each	
11/4	$1\frac{1}{2}$	6	6	\$.30	$3\frac{1}{2}$	6	\$.25	
$1\frac{1}{2}$	$2\frac{1}{4}$	7	7	.50	4	7	.38	
2	$3\frac{1}{4}$	$7\frac{3}{4}$	73/4	.78	33/4	73/4	.57	
3	5	81/4	81/4	1.39	41/4	81/4	1.09	
4	6	10	10	1.95	$5\frac{1}{2}$	10	1.50	
			Extra	Heavy				
11/4	$2\frac{1}{2}$	6	6	\$.50	31/2	6	\$.34	
11/2	31/2	7	7	.79	4	7	. 62	
2	$4\frac{1}{2}$	73/4	73/4	1.05	33/4	73/	.80	
3	6	81/4	81/4	1.60	41/4	81/4	1.21	
4	8	10	10	2.40	$5\frac{1}{2}$	10	1.84	
					-			

Extension Lead Bends No. 4 Short Inlet Extension Bends



Standard

	Weight :	Diam., In.		F	PRICE., EAC	TH	
Size	per Foot	Center to		OUTLET, CER	TER TO EN		*Extra
Inches	Pounds	End	12-in.	15-in.	18-in.	20-in.	In.
11/4	$1\frac{1}{2}$	$3\frac{1}{2}$	\$.40	\$.47	\$.55	\$.60	\$.031/4
11/2	$2\frac{1}{4}$	4	. 56	. 67	.77	.84	.041/2
2	31/4	$3\frac{3}{4}$. 79	. 94	1.09	1.19	.061/4
3	5	41/4	1.39	1.65	1.90	2.07	.103/4
4	6	$5\frac{1}{2}$	1.70	2.00	2.30	2.48	.12
			Ext	ra Heavy	,		
11/4	$2\frac{1}{2}$	$3\frac{1}{2}$	\$.60	\$.72	\$.84	\$.92	\$.05
$\frac{11/4}{11/2}$	$3\frac{1}{2}$	4	.90	1.07	1.24	1.35	.07
2	41/2	$3\frac{3}{4}$	1.08	1.28	1.49	1.63	$.08\frac{1}{2}$
3	6	41/4	1.57	1.87	2.16	2.35	.12
4	8	$5\frac{1}{2}$	2.09	2.45	2.81	3.04	.15
	No. 3 Long Inlet Extension Rends						



			Sta	ndard			
11/4	$\frac{1\frac{1}{2}}{2\frac{1}{4}}$	6	\$.46	\$.54	\$.62	\$.67	\$.031/4
$\frac{11/2}{2}$	$2\frac{1}{4}$	7	.67	.77	.88	.95	.041/2
2	$3\frac{1}{4}$	$7\frac{3}{4}$.99	1.14	1.29	1.39	.061/4
3	5	81/4	1.73	1.99	2.24	2.42	.103/4
4	6	10	2.15	2.44	2.73	2.92	.12
			Extra	Heavy			
$1\frac{1}{4}$ $1\frac{1}{2}$ 2	21/2	6	\$.70	\$.82	\$.94	\$1.02	\$.05
$1\frac{1}{2}$	$3\frac{1}{2}$	7	1.07	1.24	1.41	1.52	.07
2	$4\frac{1}{2}$	$7\frac{3}{4}$	1.35	1.56	1.76	1.90	$.081/_{2}$
3	6	$8\frac{1}{4}$	1.96	2.25	2.54	2.74	.12
4	8	10	2.62	2.98	3.34	3.58	15
₹Add	per in	ch to list	of near	est size	for exce	ss length	l.

Lead Traps







No. 10 Full S

No. 20 Three-quarter S

			Standar	d		E	ktra Hea	vy
Size	Wt. per]	PRICE, EAG	OH-	Wt. per]	PRICE, EACT	H-
In.	Ft. Lbs.	Full S	3/4 B	Half S	Ft. Lbs.	Full S	34 S	P
11/4	11/2	\$.58	\$.55	\$.51	$2\frac{1}{2}$	\$.87	\$.81	\$.77
$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	21/4	.90	.81	.75	$3\frac{1}{2}$	1.25	1.15	1.09
2	$3\frac{1}{4}$	1.38	1.30	1.20	$4\frac{1}{2}$	1.85	1.73	1.57



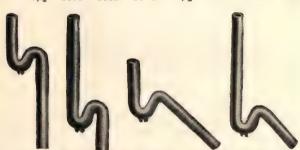




Standar

d	Extra	Heavy
	 Th	977

Size	Wt. per	F	RICE, EAC	Run Y	Wt. per	I	RICE, EACH	1
In.	Ft. Lbs.	Bag	Run.	Run Y	Ft. Lbs.	Bag	Run.	Run. Y
11/4	11/2	\$.68	\$.48	\$.52 .76	$2\frac{1}{2}$	\$1.06	\$.70	\$.74
11/2	21/4	1.08	.72	.76	31/2	1.54	1.03	1.09
2	31/4	1.73	1.13	1.34	$4^{1/2}$	2.33	1.46	1.61



No. 1 Full S No. 2 Full S No. 12 Three-quarter No. 11 Three-quar-Long Outlet Long Inlet S Long Outlet ter S Long Inlet

		Stand	iard		Extra	Heavy
		PRICE,	EACH		PRICE,	EACH
		Full S	3/4 S Long		Full S	34 S Long
Size	Wt. per	Long Inlet	Inlet or	Wt. per	Long Inlet	Inlet or
In.	Ft. Lbs.	or Outlet	Outlet	Ft. Lbs.	or Outlet	Outlet
11/4	11/2	\$.93	\$.85	$2\frac{1}{2}$	\$1.44	\$1.28
$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	$2\frac{1}{4}$	1.36	1.19	$3\frac{1}{2}$	1.95	1.72
2	51/4	2.00	1.76	$4\frac{1}{2}$	2.69	2.33



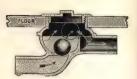


	Standard					Heavy
			EACH			
		Half S	Bag, Long		Half S	Bag, Long
Size	Wt. per	Long Inlet	Inlet or	Wt. per	Long Inlet	Inlet or
In.	Ft. Lbs.	or Outlet	Outlet	Ft. Lbs.	or Outlet	Outlet
11/4	$1\frac{1}{2}$	\$.76	\$1.09	$2\frac{1}{2}$	\$1.14	\$1.67
$\frac{1\frac{1}{4}}{1\frac{1}{2}}$	21/4	1.02	1.58	$3\frac{1}{2}$	1.50	2.24
2	31/4	1.55	2.34	$4\frac{1}{2}$	2.02	3.11

Cudell Lead Bath Traps

Made with white metal cap and

Size	Price, Each
Inches	Lead Pipe
$\frac{11/4}{11/2}$	\$3.80 4.90



No. 2 Cudell Lead P Traps With Bath Cover

Metal Ball-Anti-syphon

Made with white metal cap

and	fittings.	-
Size	Price, Each	Add for
In.	Lead Pipe	N.P. Cover
11/4	\$2.30	\$.10
11/2	2.90	.10

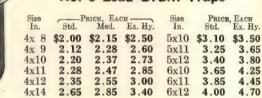
No. 2 Cudell Lead Running Traps With Bath Cover

Metal Ball

Anti-syphon Made with white metal cap and fittings. Add for N.P. Cover Price, Each Lead Pipe \$2.30 \$.10 2.90 .10



No. 5 Lead Drum Traps



Blake Extra Heavy Cast Iron Drum Traps



Opening for cover tapped for 3-inch iron pipe, and faced. Furnished regularly with wide flange, 51% inches, heavy brass screw cover. Tapping is 11/2 inches, but can be furnished 11/4 inches if wanted 2 inch tapping will be appointed. inches if wanted. 2-inch tappings will be special.



Size	Tap-	Price	No	Size	Tap-	Pric

No.	Size Inches	Tap- pings	Price Each	No.	Size Inches	Tap- pings	Price Each
1200	4x5	2	\$2.00	1208	4x8		\$2.75
1202 1204	4x8 4x8	$\frac{2}{2}$	2.25	1210 1212	4x8 4x8	3	2.75
1204	4x8	2	2.25	1214	4x8	4	3.00



No. 51, for Sink Collar

No. 52N, with Slip Joint Nut

Finish	PAIR	TED	GALV ENAM	Pmp
Sizeinches Price, with Sink Collareach Price, with Slip Joint Nuteach Price, with I.P. Thread Inlet.each	\$1.50 1.75	$1\frac{1}{2}$ \$2.00	1 ¹ / ₄ \$2.25	$1\frac{1}{2}$ \$2.90

Cast Iron P Traps No. 4072, with Slip Joint Nut

	No 66 with		
11/4	\$1.00 \$1.40	11/2	\$1.30 \$1.80
In.	ed Enam. Ptd.	In.	ed Enam. Ptd.
Size	PRICE, EACH Paint- Galv. or	Size	PRICE, EACH Paint- Galv. or

Both Ends 11/4 \$.75 \$1.15 11/2 \$1.00 \$1.50

No. 65 Cast Iron P Traps

For Sink Collar

	For Sink Colla	r	
	Sizeinches Price, Paintedeach	11/4	11/2
-	Price, Painted each "Galv. or White Enam-	\$.75	\$1.00
	el Paintedeach	1.15	1.50
	Add for Top Cleanout Plug.		
	each	.35	35

Cast Iron Running Traps With Brass Cleanout Screw



No. 84 Male Thread Both Ends

Price, Painted each Galvanized "	1.40	2.00	\$2.25 3.00
No. 85 Male and Female	Threa	d	
Price, Paintedeach "Galvanized"	\$1.15	\$1.65	\$2.50
" Galvanized "	1.55	2.15	3.25
Threaded Female Both Ends, Add. "	. 10	10	. 25

No. 1190 Bath Trap Ells

Roughs-in a 4x5 cast iron rumd trap in 7½-inch space, where it requires 9-inch width 1½-inch street ell connection.

$1\frac{1}{2}$ -inch tap.	Weight, 3½ pounds.
Price	each \$.90

Dehn Acme Double Trapped Grease Traps



No. 112, Double Trapped



No. 113, Double Trapped Water Cooled

Water cooling grease traps should be properly connected with cold water supply to permit continuous circulation of cold water through water cooler in grease trap. The 15-1 and 18-1 sizes of Nos. 112 and 113 grease traps only furnished with 2-inch hub or iron pipe threaded connections. Larger sizes have 4-inch hub connections.

. 0					COMMITTE	CULUIIO.		
	Diam.	Depth	Waste	Waste	VENT	HUB	PRICE.	ELOH
Size	Top	Over All	Inlet	Outlet	No. 112	No. 113	PAIN	
No.	In.	In.	In.	In.	In.	In.	No. 112	No. 113
15-1	12	15	2	2	$1\frac{1}{2}$	11/2	\$20.00	\$35.00
18-1	12	18	2	2	$1\frac{1}{2}$	11/2	25.00	40.00
24-1	20	24	4	4	2	2	45.00	65.00
30-1	20	30	4	4	2	2	55.00	75.00
36-1	20	36	4	4	2	2	70.00	90.00
24-2	24	24	4	4	2	4	60.00	80.00
30-2	24	30	4	4	2	4	75.00	95.00
36-2	24	36	4	4	2	4	90.00	110.00

Can be furnished enameled inside or enameled inside and outside. Prices upon application.

No. 1111/2 Dehn Hygienic Hair Traps

PATENTED

Inlet and outlet 1½-inch iron pipe, length 13 inches, width 9 inches, depth 9 inches, grease space 6x11 inches.

	- PRICE, EACH-	
Painted	Enameled	Enameled
In and	In or	In and
Out	Out	Out
\$15.00	\$20.00	\$25.00

Can be furnished with 1½-inch brass solder unions with straight or bent tail pieces at \$3.00 extra per set.



No. 7082 Cast Iron Grease Traps



Cast iron grease trap with brass handhole cover and removable top with swivel bolts.

Diam. Inches	Height Inches	Opening Inches
$16\frac{1}{2}$ $16\frac{1}{2}$	13	2 Soil
$16\frac{1}{2}$	$\frac{13}{14\frac{1}{2}}$	2 I. P. 4 Soil

	-			For Soil	For Iron
				Pipe	Pipe
Price.	No.	7082.	Painted All Over	\$18 10	\$20.45
"	66	7000	The man alast Tarain	. 410.10	
**	24	1002,	Enameled Inside	. 28.50	30.85
44	44	7082.	" All Over	41.90	44.25
			the O tolition,	. 41.00	******

Cast Iron Soil Pipe

Five-foot Lengths



		PRICE, PE	в Гоот-	
Size	SING	LE HUB-	-Doubl	E HUB-
Inches	Standard	Extra Heavy	Standard	Extra Heavy
2	\$.26	\$.40	\$.28	\$.42
3	.35	.62	.37	.65
4	.46	.84	.48	.88
5	.58	1.10	.62	1.14
6	.70	1.30	.74	1.36
7	1.40	2.20	1.60	2.40
8	1.40	2.20	1.60	2.40
10	2.40	3.60	2.60	3.80
12	3.00	4.40	3.20	4.60
15	5.60	8.00	5.80	8.40

Approximate Weight of Soil Pipe per Foot

Sizeinches	2	3	4	5	6	7	8	10	12	15
Standardlbs.	33/5	51/5	7	9	11	15	17	23	33	45
Standardlbs. Extra Hvy "	51/2	91/2	13	17	20	27	34	24	54	75

Approximate Weight of Soil Pipe Fittings .

	Style			_			—ST.	ANDARI)——		
	Size	in	ches	2	3	4	5	6	8	10	12
	Quarter Bends,	lbs.	.ea.	45	7	$10\frac{1}{2}$	13	$16\frac{1}{2}$	33	54	58
	Sixth "	"	. "	4	$6\frac{1}{2}$	9	111	14	30	30	48
	Eighth "	"	- 46	31	6	8	10%	13	24	38	42
	T Branches	-46	"	7	11	144	$18\frac{7}{2}$	23	33	42	102
	San. T	"	"	$7\frac{1}{2}$	12	16	20°	24	49	100	
	Crosses	66	66	91	14	19	$23\frac{1}{2}$	$28\frac{1}{2}$	40	70	100
	San. Crosses	ш	.81	10%	15%	$20\frac{1}{2}$		$31\frac{7}{2}$	52		
	Y Branches	44	44	$7\frac{7}{2}$	12	17	22	28	58	106	158
	Half Y Branches	а	- 46	7	11	15	19	24			
	Double Y "	66	и	10%	16	$22\frac{1}{2}$	30	361	77		
	Double Hubs	"	- 46	4	$5\frac{3}{4}$	$7\frac{7}{2}$	9	10%	16	21	35
	S Traps	66	"	81	14	21	281	$37\frac{7}{3}$			
,	P "	66	46	7	12	175	$24\frac{1}{2}$	$31\frac{5}{2}$	80		
0	Rung Traps	66	u	81	131	$19\frac{5}{2}$	26	34	54		
	Reducers	- 66	44		$4\frac{7}{2}$	6	71	9	8	211	28
					-		•			-	
	Style						Extr	A HE	LVY -		
	Style				3	4	Extr 5	HE/	8	10	12
	SizeQuarter Bends,	. in	ches .ea.		3 10½	$1\overline{5}$	5 19				12 95
	SizeQuarter Bends, Sixth "	lbs "	ches .ea.	2		15 13	5 19 16½	6	8	10	
	SizeQuarter Bends,	lbs "	ches .ea.	2 6 6 5 1 2	$10\frac{1}{2}$	15 13	5 19 16½	$\frac{6}{23\frac{1}{2}}$	8 52	10 80	95
	SizeQuarter Bends, Sixth "	lbs .	ches .ea.	2 6 6 5 10 1	$10\frac{1}{2}$ $9\frac{1}{4}$ $8\frac{1}{2}$ $15\frac{1}{4}$	15 13 12‡ 21	$ \begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \end{array} $	$ \begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \end{array} $	52 44 40 60	10 80 50 56 75	95 90
	SizeQuarter Bends, Sixth " Eighth "	lbs.	ches .ea. .«	$ \begin{array}{c} 6^{\frac{3}{4}} \\ 6 \\ 5^{\frac{1}{2}} \\ 10^{\frac{1}{4}} \\ 11 \end{array} $	$10\frac{1}{2}$ $9\frac{1}{4}$ $8\frac{1}{2}$ $15\frac{1}{4}$	15 13 12½ 21 22½	$5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \end{array}$	52 44 40 60 80	10 80 50 56 75	95 90 80
	Size	lbs	ches .ea. .«	2 6 5 10 11 13 14	10½ 9¼ 8½ 15¼ 16¼ 19¾	15 13 12½ 21 22½ 27	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 40\frac{1}{2} \end{array}$	8 52 44 40 60 80 92	10 80 50 56 75 135 116	95 90 80 166
	Size	lbs.	ches .ea. .«	$ \begin{array}{c} 6^{\frac{3}{4}} \\ 6 \\ 5^{\frac{1}{2}} \\ 10^{\frac{1}{4}} \\ 11 \end{array} $	10½ 9¼ 8½ 15¼ 16¼ 19¾ 22	15 13 $12\frac{1}{4}$ 21 $22\frac{1}{2}$ 27 $29\frac{1}{2}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \\ 36\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 40\frac{1}{2} \\ 44\frac{1}{2} \end{array}$	\$ 52 44 40 60 80 92 79	10 80 50 56 75 135 116 161	95 90 80 166 210
	Size	lbs. " " " " " " " " " " " " " " " "	ches .ea. .«	2 6 5 10 11 13 14	10½ 9¼ 8½ 15¼ 16¼ 19¾	15 13 $12\frac{1}{4}$ 21 $22\frac{1}{2}$ 27 $29\frac{1}{2}$ 24	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28 \\ 36\frac{1}{2} \\ 36\frac{1}{2} \\ 31\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 40\frac{1}{2} \end{array}$	8 52 44 40 60 80 92	10 80 50 56 75 135 116	95 90 80 166 210 176
	Size	lbs.	ches .ea.	2 63 6 5 10 1 11 13 1 14 1	$ \begin{array}{c} 10\frac{1}{2} \\ 9\frac{1}{4} \\ 8\frac{1}{2} \\ 15\frac{1}{4} \\ 16\frac{1}{4} \\ 19\frac{3}{4} \\ 22 \\ 17 \\ 15\frac{1}{2} \end{array} $	$ \begin{array}{c} 15 \\ 13 \\ 12\frac{1}{4} \\ 21 \\ 22\frac{1}{2} \\ 27 \\ 29\frac{1}{2} \\ 24 \end{array} $	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28 \\ 36\frac{1}{2} \\ 36\frac{1}{2} \\ 31\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 40\frac{1}{2} \\ 44\frac{1}{2} \end{array}$	\$ 52 44 40 60 80 92 79	10 80 50 56 75 135 116 161	95 90 80 166 210 176
	Size	lbs.	ches ea.	2 6 5 10 11 13 14 11 10 14 11 10 14 11 11 14 14 11	$\begin{array}{c} 10\frac{1}{2} \\ 9\frac{1}{4} \\ 8\frac{1}{2} \\ 15\frac{1}{4} \\ 16\frac{1}{4} \\ 19\frac{3}{4} \\ 22 \\ 17 \\ 15\frac{1}{2} \\ 23 \\ \end{array}$	$\begin{array}{c} 15 \\ 13 \\ 12\frac{1}{4} \\ 21 \\ 22\frac{1}{2} \\ 27 \\ 29\frac{1}{2} \\ 24 \\ 21\frac{1}{2} \\ 32 \\ \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \\ 36\frac{1}{2} \\ 27\frac{1}{2} \\ 41\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 40\frac{1}{2} \\ 44\frac{1}{2} \\ 39\frac{1}{2} \\ 34 \\ 52 \\ \end{array}$	8 52 44 40 60 80 92 79 91 90 100	10 80 50 56 75 135 116 161 136	95 90 80 166 210 176
	Size	lbs.	ches .ea.	2 64 5 104 11 134 14 11 14 14 14 14 14 15 14	$\begin{array}{c} 10\frac{1}{2} \\ 9\frac{1}{4} \\ 8\frac{1}{2} \\ 15\frac{1}{4} \\ 16\frac{1}{4} \\ 19\frac{3}{4} \\ 22 \\ 17 \\ 15\frac{1}{2} \\ 23 \\ 8\frac{1}{4} \end{array}$	$\begin{array}{c} 15 \\ 13 \\ 12\frac{1}{4} \\ 21 \\ 27 \\ 29\frac{1}{2} \\ 24 \\ 21\frac{1}{2} \\ 32 \\ 10\frac{3}{4} \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 15\frac{1}{4} \\ 26^{\frac{1}{2}} \\ 28 \\ 36^{\frac{1}{2}} \\ 36^{\frac{1}{2}} \\ 27^{\frac{1}{2}} \\ 41^{\frac{1}{2}} \\ 12^{\frac{3}{4}} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4} \\ 32\frac{1}{2} \\ 34\frac{1}{2} \\ 440\frac{1}{2} \\ 39\frac{1}{2} \\ 34 \\ 52 \\ 14\frac{3}{4} \end{array}$	\$ 52 44 40 60 80 92 79 91 90 100 30	10 80 50 56 75 135 116 161	95 90 80 166 210 176
	Size	lbs.	ches .ea. 	2 6 5 10 11 13 14 11 10 14 14 14 14 14 14 14 14 14 14 14 14 14	$\begin{array}{c} 10\frac{1}{2} \\ 9\frac{1}{4} \\ 8\frac{1}{2} \\ 15\frac{1}{4} \\ 16\frac{1}{4} \\ 19\frac{3}{4} \\ 22 \\ 17 \\ 15\frac{1}{2} \\ 23 \\ 8\frac{1}{4} \\ 20 \\ \end{array}$	$\begin{array}{c} 15 \\ 13 \\ 12\frac{1}{4} \\ 21 \\ 22\frac{1}{2} \\ 27 \\ 29\frac{1}{2} \\ 24 \\ 21\frac{1}{2} \\ 32 \\ 10\frac{3}{4} \\ 30 \\ \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 26\frac{1}{2} \\ 28 \\ 36\frac{1}{2} \\ 36\frac{1}{2} \\ 27\frac{1}{2} \\ 12\frac{1}{2} \\ 40\frac{1}{2} \\ 40\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23\frac{1}{2} \\ 20 \\ 18\frac{1}{4}\frac{1}{2}\frac{1}{2} \\ 34\frac{1}{2}\frac{1}{2}\frac{1}{2} \\ 44\frac{1}{2}\frac{1}{2}\frac{1}{2} \\ 39\frac{1}{2} \\ 34 \\ 52 \\ 14\frac{3}{4}\frac{1}{4} \\ 53\frac{1}{2} \end{array}$	\$ 52 44 40 60 80 92 79 91 90 100 30	10 80 50 56 75 135 116 161 136	95 90 80 166 210 176 218
	Size	lbs. a a a a a a a a a a a a a	ches .ea. 	2 6 5 10 11 13 14 14 11 14 14 14 14 12 10 12 10 12	$10\frac{1}{2}$ $9\frac{1}{4}$ $8\frac{1}{2}$ $15\frac{1}{4}$ $16\frac{1}{4}$ $16\frac{1}{4}$ 22 17 $15\frac{1}{2}$ 23 $8\frac{1}{4}$ 20 $17\frac{1}{4}$	$\begin{array}{c} 15\\ 13\\ 12\frac{1}{4}\\ 21\\ 22\frac{1}{2}\\ 27\\ 29\frac{1}{2}\\ 24\\ 21\frac{1}{2}\\ 32\\ 10\frac{3}{4}\\ 30\\ 25\frac{1}{2} \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \\ 27\frac{1}{2} \\ 12\frac{1}{2} \\ 40\frac{1}{2} \\ 34\frac{1}{2} \\ 34\frac{1}{2} \\ 34\frac{1}{2} \end{array}$	$\begin{array}{c} 6 \\ 23^{\frac{1}{2}} \\ 20 \\ 18^{\frac{1}{4}} \\ 32^{\frac{1}{2}} \\ 34^{\frac{1}{2}} \\ 40^{\frac{1}{2}} \\ 44^{\frac{1}{2}} \\ 39^{\frac{1}{2}} \\ 34 \\ 52 \\ 14^{\frac{3}{4}} \\ 53^{\frac{1}{2}} \\ 45 \end{array}$	\$ 52 44 40 60 80 92 79 91 90 100 30 123 100	10 80 50 56 75 135 116 161 136	95 90 80 166 210 176 218
-	Size	lbs. a a a a a a a a a a a a a	ches .ea.	2 6 5 10 11 13 14 11 10 14 14 14 14 14 14 14 14 14 14 14 14 14	$\begin{array}{c} 10\frac{1}{2} \\ 9\frac{1}{4} \\ 8\frac{1}{2} \\ 15\frac{1}{4} \\ 16\frac{1}{4} \\ 19\frac{3}{4} \\ 22 \\ 17 \\ 15\frac{1}{2} \\ 23 \\ 8\frac{1}{4} \\ 20 \\ \end{array}$	$\begin{array}{c} 15 \\ 13 \\ 12\frac{1}{4} \\ 21 \\ 22\frac{1}{2} \\ 27 \\ 29\frac{1}{2} \\ 24 \\ 21\frac{1}{2} \\ 32 \\ 10\frac{3}{4} \\ 30 \\ \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \\ 27\frac{1}{2} \\ 27\frac{1}{2} \\ 27\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 34\frac{1}{2} \\ 37 \\ \end{array}$	$\begin{array}{c} 6 \\ 23^{\frac{1}{2}} \\ 20 \\ 18^{\frac{1}{4}} \\ 32^{\frac{1}{2}} \\ 34^{\frac{1}{2}} \\ 40^{\frac{1}{2}} \\ 44^{\frac{1}{2}} \\ 39^{\frac{1}{2}} \\ 34 \\ 52 \\ 14^{\frac{3}{4}} \\ 53^{\frac{1}{2}} \\ 45 \\ 48 \end{array}$	\$ 52 44 40 60 80 92 79 91 90 100 30 123 100 110	10 80 50 56 75 135 116 161 136	95 90 80 166 210 176 218
	Size	lbs. a a a a a a a a a a a a a	ches .ea. 	2 6 5 10 11 13 14 14 11 14 14 14 14 12 10 12 10 12	$10\frac{1}{2}$ $9\frac{1}{4}$ $8\frac{1}{2}$ $15\frac{1}{4}$ $16\frac{1}{4}$ $19\frac{3}{4}$ 22 17 $15\frac{1}{2}$ 23 $8\frac{1}{4}$ 20 $17\frac{1}{4}$ 19	$\begin{array}{c} 15\\ 13\\ 12\frac{1}{4}\\ 21\\ 22\frac{1}{2}\\ 27\\ 29\frac{1}{2}\\ 24\\ 21\frac{1}{2}\\ 32\\ 10\frac{3}{4}\\ 30\\ 25\frac{1}{2} \end{array}$	$\begin{array}{c} 5 \\ 19 \\ 16\frac{1}{2} \\ 26\frac{1}{2} \\ 28 \\ 33\frac{1}{2} \\ 27\frac{1}{2} \\ 27\frac{1}{2} \\ 27\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 24\frac{1}{2} \\ 34\frac{1}{2} \\ 37 \\ \end{array}$	$\begin{array}{c} 6 \\ 23^{\frac{1}{2}} \\ 20 \\ 18^{\frac{1}{4}} \\ 32^{\frac{1}{2}} \\ 34^{\frac{1}{2}} \\ 40^{\frac{1}{2}} \\ 44^{\frac{1}{2}} \\ 39^{\frac{1}{2}} \\ 34 \\ 52 \\ 14^{\frac{3}{4}} \\ 53^{\frac{1}{2}} \\ 45 \end{array}$	\$ 52 44 40 60 80 92 79 91 90 100 30 123 100 110	10 80 50 56 75 135 116 161 136	95 90 80 166 210 176 218

To determine the right or left-hand inlet or outlet in bends, branches and offsets, place them with the hub facing toward you and with spigot lower than hub. On traps, place in regular position with the hub end nearest you.

Long quarter bends are measured from the inside of hub nearest spigot to end of spigot. Other bends are measured from end of spigot to nearest point on inside base of hub. Long T's, Y's, etc., are measured from the base of the hub on main to the end of spigot.

Cast Iron Soil Pipe Fittings

100		Quarter Bends					
	Size Inches	PRICE,	Елсн Ех. Ну.	Size Inch :s	Price Std.	Ex. Hy.	
	2 3	\$.40 .55	\$.55 .70	8 10	\$4.00 5.90	\$5.00 6.50	
	4	.70	.85	12	8.65	10.80	
No. SP-3	5 6	1.05	1.25	15	16.80	21.00	

			Fift	n Bend	S	
Size nches	PRICE Std.	Ех. Ну.	Size Inches	Price, Std.	Елсн Ех. Ну.	
2 3	\$.45 .80	\$.60 1.00	8 10	\$4.00 5.90	\$5.00 6.50	
4 5	.80 1.05	1.00 1.25	12 15	8.65 16.80	10.80 21.00	
6	1.30	1.55				No. SP-4

		SIX	rii bei	lus		
	Size Inches	PRICE, Std.	Ex. Hy.	Size Inches	PRICE,	Each Ex. Hy .
	2 3	\$.40	\$.45	8	\$4.00	\$5.00 6.50
	4	.60	. 75 . 75	10 12	5.90 8.65	10.80
No. SP-5	5 6	1.05	1.25 1.55	15	16.80	21.00
		1.00	2.00	* *		

Sivth Bonds

		E	igntn	benas		
Size Inches	Price Std.	Ex. Hy.	Size Inches	Price Std.	Ex. Hy.	
2	\$.35	\$.40	8	\$4.00	\$5.00	
3	. 45	.55 .75	10 12	5.90 8.65	6.50 10.80	
5	. 80	1.00	15	16.80	21.00	No. SP-6
6	1.05	1.25				140, 31 -0

Sixteenth Bends PRICE, EACH Std. Ex. Hy. PRICE, EACH Std. Ex. Hy Inches 2 \$.35 \$.40 \$5.00 8 \$4.00 .50 .70 10 5.90 6.50 . 60 .70 12 8.65 10.80 .80 1.00 16.80 21.00 1.00 1.25

Double Hub Bends





Size	Size, Inlet			Size	Size, Inlet	PRICE,	
In.	Inches	Std.	Ex. Hy.	In.	Inches	Std.	Ex. Hy.
2	2	\$1.25	\$1.55	5	2	\$3.70	\$4.60
3	2	1.25	1.55	5	3	3.70	4.60
3	3	1.25	1.55	. 5	4	3.70	4.60
4	2	1.25	1.55	6	2	4.30	5.40
4	3	3.10	3.85	6	3	4.30	5.40
4	4	3.10	3.85	6	4	4.30	5 40

Cast Iron Soil Pipe Fittings Long Bends



No. SP-14 Long Quarter Bends



No. SP-15 Long Sixth Bends



No. SP-16 Long Eighth Bends

PRICE, EACH Extra andard Heavy Length in Clear Inches Size Standard 222333444 12 \$.90 \$1.10 18 1.05 1.30 24 1.50 1.85 12 1.85 18 2.30 2.75 1.85 24 2.25 12 1.25 1.55 1.85 3.40 18 1,.50 24 2.75 30 3.85 4455556 4.80 4.90 6.15 12 18 4.60 4.30 5.40 24 36 4.90 6.15 5.25 6.55 5.40 6.15 12 4.30 18 5.00 5.50 6.90 18 7.50 10.00

Long Quarter Bends
No. SP-17 with 2-inch Low Heel Inlet

Sise Inches	Length in Clear Inches
4	18

Price Each



Reilly Long Sweep Quarter Bends



No. SP-22		
Size Inches	PRICE, E	Extra Heavy
4	\$2.80	\$3.50
5	4.00	5.00
6	4.80	6.00
4x2	2.15	2.70
5x4	2.80	3.50

Reilly Long Sweep Quarter Bends No. SP-23 with Foot Rest

Size Inches	Stand- ard	Extra Heavy
4	\$3.80	\$4.50
5	5.25	6.25
6	6.30	7.50
4x2 5x4	3.15	3.70
374	4.05	4.75



Sanitary Long Sweep Quarter Bends No. SP-27



O.	PRICE	EACE		PRICE,	EACH
Size In.	Std.	Extra Heavy	Size In.	Std.	Extra Heavy
2	\$.75	\$.90		\$2.75	\$3.40
3	.95 1.25	1.15	8 10	6.00	7.50
5	1.70	2.00	10	8.00	10.00

Sanitary Short Sweep Quarter Bends

		_	No.	SP-		
CI*	PRICE,				PRICE	EACH
Size	Cur	Extra		Size		Extra
In.	Std.	Heavy		In.	Std.	Heavy
2	\$.60	\$.75		6	\$2.50	\$3.10
3	.90	1.10		8	4.80	6.00
4	1.15	1.40		10	6.80	8.50
5	1.55	1.85				



Cast Iron Soil Pipe Fittings

Double Quarter Bends



Size Inches	Standard Pa	Extra Heavy
2x2	\$1.50	\$1.85
3x2 3x3	2.45 2.55	3.05 3.20
4x2 4x3	2.80	3.45
4x4	2.80	3.45 3.45

Single Hub Return Bends

Size Inches	Standard	Extra Heavy
2	\$1.25	\$1.55
3	1.50	1.85
4 5	1.70	2.00
6	2.45	3.05
8	3.10	3.85
0	* * * *	7.75



Double Hub Return Bends



1	ruches	Standard	Extra Hea
	2	\$1.35	\$1.70
	3	1.60	2.00
	4	1.75	2.20
	5	2.75	3.40
	6	3.40	4.25
	8		8.25

T Branches



No. SP-52, Plain



PRICE, EACH—

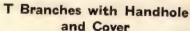
No. SP-53 With Right-Hand

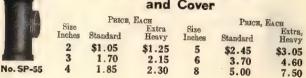
	Dargu	EACH.		D	E	Side i	niet	
Size In.	Stand- ard	Extra Heavy	Size In.	Price, Stand- ard	Extra Extra Heavy	E	CTRAS, AD	
2x2 3x2 3x3 4x2	\$.55 .75 .85	\$.75 .90 1.10 1.10	6x2 6x3 6x4 6x5	\$1.80 1.80 1.80 2.00	\$2.15 2.15 2.15 2.45	Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
4x3 4x4 5x2 5x3 5x4	1.00 1.15 1.20 1.25 1.40	1.25 1.40 1.45 1.55 1.70	6x6 8 10 12 15	2.00 6.00 10.80 15.10 33.60	2.45 9.00 15.10 19.40 42.00	2 3 4 5	\$1.00 1.25 1.50 2.00 2.50	\$1.50 2.00 2.50 3.00 3.50
5x5	1.65	2.00						

When ordering specify whether wanted with right or lefthand side inlet.

Tapped T Branches

			100	
Size Inches	Thread Inches	PRICE, E	Extra Heavy	
2	$1\frac{1}{4}, 1\frac{1}{2}, 2$ $1\frac{1}{4}, 1\frac{1}{6}, 2$	\$.70 .85	\$.85 1.10	
4 5	$\frac{114}{112}, \frac{112}{112}, \frac{2}{2}$	1.00	1.25	
6	$1\frac{1}{4}, \frac{1}{1}\frac{1}{2}, \frac{2}{2}$	1.60 2.50	2.00 3.10	No





Cast Iron Soil Pipe Fittings Long T Branches



No. SP-57

	Length				Length		
	in	PRICE	, EACH		in	PRICE	EACH
Size	Clear	C) 1	Extra	Size	Clear	G1.1	Extra
In.	In.	Std.	Heavy	In.	In.	Std.	Heavy
2	12	\$1.20	\$1.50	4	24	\$4.10	\$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30				

Sanitary T Branches





No. SP-60 With Right-hand Side Inlet

	PRICE,	EACH		Price.	EACH			
Size		Extra	Size		Extra			
In.	Std.	Heavy	Inches	Std.	Heavy		Ewmp.	s, Add To
2x2	\$.55	\$.75	6x2	\$1.80	\$2.15			T, EACH
3x2	.75	.90	6x3	1.80	2.15			Brass
3x3	.85	1.10	6x4	1.80	2.15	Size	Right	Trap Screwe
4x2	.85	1.10	6x5	2.00	2.45	Inlets	Left	Incl.
4x3	1.00	1.25	6x6	2.00	2.45	In.	Inlets	Inlets
4x4	1.15	1.40	7	7.00	9.80	2	\$1.00	\$1.50
5x2	1.20	1.45	8	6.00	9.00	3	1.25	2.00
5x3	1.25	1.55	10	10.80	15.10	4	1.50	2.50
5x4	1.40	1.70	12	15.10	19.40	5	2.00	3.00
5x5	1.65	2.00	15	33.60	42.00	6	2.50	3.50
W	Then order	ering s	specify	whether	wanted	with	right	or left-
- "	ILOM OF CH		Proces	***********	11 0000 000		0	

Tapped Sanitary T Branches

Table		
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	1886	

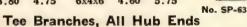
No. SP-62

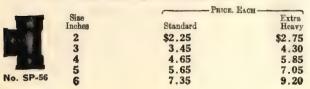
hand side inlet.

		PRICE, E	
Size	Thread		Extra
Inches	Inches	Standard	Heavy
2	$1\frac{1}{4}, 1\frac{1}{2}, 2$	\$.75	\$.90
3	$1\frac{1}{4}, 1\frac{1}{2}, 2$.95	1.10
4	$1\frac{1}{4}$, $1\frac{1}{2}$, 2	1.25	1.55
5	$1\frac{1}{4}, 1\frac{1}{2}, 2$	1.85	2.30
6	$1\frac{1}{4}$, $1\frac{1}{2}$, 2	2.95	3.70

Special Reducing Sanitary T Branches

Size		, EACH	Size		EACH	
Inches	Std.	Ex. Hy.	Inches	Std.	Ex. Hy.	
3x2x3	\$2.50	\$3.15	5x4x5	\$3.80	\$4.75	
4x2x4	3.00	3.70	6x4x4	4.45	5.55	
4x3x4	2.95	3.70	6x4x5	4.60	5.75	
5x4x4	3.80	4.75	6x4x6	4.60	5.75	





Cast Iron Soil Pipe Fittings Long Sanitary T Branches



No. SP-64

	Length				Length		
	in	Pric	E, EACH		in	PRICE.	EACH
Size	Clear		Extra	Size	Clear		Extra
Inches	In.	Std.	Heavy	Inches	In.	Std.	Heavy
2	12	\$1.20	\$1.50	4	24	\$4.10	\$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30	8	36	9.00	

Y and Half Y Branches



No. SP-73 Y Branch



-	PRICE	, EACH		PRICE,	EACH
Size	Stand-	Extra	Size	Stand-	Extra
Inches	ard	Heavy	Inches	ard	Heavy
2x2	\$.55	\$.75	6x2	\$1.80	\$2.15
3x2	. 75	.90	6 x 3	1.80	2.15
3x3	.85	1.10	6x4	1.80	2.15
4x2	.85	1.10	6x5	2.00	2.45
4x3	1.00	1.25	6x6	2.00	2.45
4x4	1.15	1.40	7	7.00	9.80
5x2	1.20	1.45	8	6.00	9.00
5x3	1.25	1.55	10	10.80	15.10
5x4	1.40	1.70	12	15.10	19.40
5x5	1.65	2.00	15	33.60	42.00

Y and Half Y Branches with Side Inlet



No. SP-75 Y Branch

	EXTRAS	ADD TO THE
	Abovi	LIST, EACH
Size		Brass Trap
Inlet		Screws
Inches	Inlets	Incl. Inlets
2	\$1.00	\$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

3.50

No. SP-76 Half Y Branch

PRICE, EACH

Extra Heavy

\$3.85

4.60

4.60

4.60

6.15

6.15

6.15

Inverted Y Branches PRICE, EACH



	Size		Extra	Size	
	In.	Std.	Heavy	Inches	Std.
	2x2	\$1.00	\$1.25	5x4	\$3.10
	3x2	1.40	1.85	5x5	3.40
	3x3	1.40	1.85	6x2	3.70
	4x2	1.70	2.15	6x3	3.70
	4x3	1.70	2.15	6x4	4.95
	4x4	1.70	2.15	6x5	4.95
No. SP-77	5x2	2.45	3.05	6x6	4.95
	5x3	2.45	3.05		

Cast Iron Soil Pipe Fittings Long Y Branches



No. SP-78

	Length				Length		
CI*	in	Price,		44	in	PRICE	E, EACH
Size Inches	Clear	Std.	Extra	Sine	Clear	64.9	Extra
			Heavy	Inches	Inches	Std.	Heavy
2	12	\$1.20	\$1.50	4	24	\$4.10	\$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30		11		1111

Special Reducing Y Branches



Size Inches	PRICE Std.	, Еасн Ех. Ну.	Size Inches	Price Std.	Ех. Ну.
3x2x3	\$2.50	\$3.15	6x4x5	\$4.60	\$5.75
4x2x4	2.95	3.70	6x5x4	4.60	5.75
4x3x4	2.95	3.70	6 x 5 x 5	4.60	5.75
5x4x4	3.80	4.75	6x4x6	4.60	5.75
5x4x5	4.60	5.75	6x5x6	4.60	5.75
6x4x4	4.45	5.55			

No. SP-79

Inverted Y Branches

Tapped for Iron Pipe

Thread, 11/4, 11/2 and 2 inches.

	,	() -/2			
Size	PRICE, Stand-	Each Extra	Size	PRICE, Stand-	Extra
In.	ard	Heavy	Inches	ard	Heavy
2	\$1.40	\$1.70	5	\$2.80	\$3.50
3	2.00	2.45	6	3.40	4.25
A	2 20	2 75	_		



Double Inverted Y Branches



No. SP-81

Size	PRICE, EA	
In.	Standard	Ex. Hy.
2x2	\$2.45	\$3.05
3x2	3.10	3.85
3x3	3.10	3.85
4x2	3.70	4.60
4x3	3.70	4.60
4x4	3.70	4.60

Double Y Branches







No. SP-91 With Side inlets

	PRICE	EACH	,	Pric	CE, EAC.		
Size		Extra	Size		Eztra	EXTR	AS, ADD TO
In.	Std.	Heavy	Inches	Std.	Heavy	Li	ST, EACH
2x2	\$1.25	\$1.55	5x5	\$4.95	\$6.15		Brass
		4					Trap
3x2	1.65	2.00	6x2	6.15	7.70	Size	Screws
3x3	1.65	2.00	6x3	6.15	7.70	Inlet	Incl.
4x2	1.80	2.15	6x4	6.15	7.70	In. Inlets	Inlets
4x3	1.80	2.15	6x5	6.15	7.70	2 \$1.00	\$1.50
4x4	1.80	2.15	6x6	6.15	7.70	3 1.2	
5x2	4.95	6.15	8x8	9.00	13.50	4 1.50	
5x 3	4.95	6.15	10×10	16.20	22.65	5 2.0	3.00
5x4	4.95	6.15	12x10	22.70	29.15	6 2.5	0 3.50

Cast Iron Soil Pipe Fittings Double Half Y Branches





No. SP-92

No. SP-93 With Side Inle

Size In.	Price Std.	Extra Extra Heavy	Size In.	Parce Std.	Extra Extra Heavy	Extras, Add to
2x2 3x2	\$1.25 1.65	\$1.55 2.00	5x5 6x2	\$4.95 6.15	\$6.15	List, Each Brass Trap
3x3 4x2	1.65	2.00	6x3 6x4	6.15 6.15	7.70	Size Screws Inlet Incl. In. Inlets Inlets
4x3 4x4	1.80	2.15 2.15	6x5 6x6	6.15 6.15	7.70	2 \$1.00 \$1.50
5x2 5x3	4.95 4.95	6.15	8x8	9.00	7.70	3 1.25 2.00 4 1.50 2.50
5x4	4.95	6.15 6.15	10x10 12x10	16.20 22.70	22.65 29.15	5 2.00 3.00 6 2.50 3.50

Long Double Y Branches



Size	PRICE,	EACH —
Inches	Standard	Ex. Hy.
2x2x12	\$1.60	\$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6.90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

Combination Y and Eighth Bends







No. SP-102 With Left-hand Side Inlet

	PRICE	E, EACH		PRICE	L EACH		EXTRAS	ADD TO
Size		Extra	Size		Extra			EACH
In.	Std.	Heavy	In.	Std.	Heavy			Brass
2x2	\$1.05	\$1.30	5x4	\$3.70	\$4.60	011	Right	Trap
3x2	1.70	2.15	5x5	3.70	4.60	Size	10°	Screws
3x3	1.70	2.15	6x2	5.55	6.90	Inlet In.	Left Inlets	Incl. Inlets
						100		
4x2	1.70	2.15	6x3	5.55	6.90	2	\$1.00	\$1.50
4x3	1.70	2.15	6x4	5.55	6.90	3	1.25	2.00
4x4	1.70	2.15	6x5	5.55	6.90	4	1.50	2.50
5x2	3.70	4.60	6x6	5.55	6.90	5	2.00	3.00
5x3	3.70	4.60	9			6	2.50	3.50

Crosses

Tapped for Iron Pipe

	10	thhen for their	ripe
Size	Thread Inches	Stand- ard	E, EACH————————————————————————————————————
2	114, 112, 2	\$1.15	\$1.40
3 4	$1\frac{1}{4}$, $1\frac{1}{2}$, $2\frac{1}{4}$, $1\frac{1}{2}$, $2\frac{1}{4}$	1.25 1.40	1.55 1.70
5 6	$1\frac{1}{4}, 1\frac{1}{2}, 2$ $1\frac{1}{4}, 1\frac{1}{2}, 2$	2.25 3.45	2.80 4.30 N

Cast Iron Soil Pipe Fittings **Upright Y Branches**



PRICE EACH PRICE EACH Size Extra Inlet Tap- Hub				140. 2	-111				, ADD TO
PRICE EACH PRICE EACH Size I. P.						3		List	EACH
Size Extra Size In. Std. Heavy In. S		PRICE	. EACH		PRICE	EACH	Size		,
In. Std. Heavy In. Std. Heavy In. pings Inlets 2x2 \$1.85 \$2.30 5x4 \$4.90 \$6.15 38-1 \$.60	Size		Extra	Size		Extra		Tan-	Hub
2x2 \$1.85 \$2.30 5x4 \$4.90 \$6.15 3/8-1 \$.60	In.	Std.	Heavy	In.	Std.				
70.00	2-2	01 OF							AMIOUS
			4	5X4		\$6.15	3/g-1	\$.60	
3X2 1.85 2.30 5x5 5.50 6.90 11/4.11/5 1.25	3x2	1.85	2.30	5x5	5.50	6.90	11/4, 11/2	1.25	
0.0 1.01 0.00	3v3	1 85	2 30						\$1.00
1100 0110									\$1.00
$4x^2$ 1.85 2.30 6x3 4.90 6.15 $2\frac{1}{2}$ 1.50	4XZ	1.85	2.30	6x3	4.90	6.15	$2^{1/2}$	1.50	
4x3 3.10 3.85 6x4 5.50 6.90 3 1.50 1.25	4x3	3.10	3.85	6v4	5 50	6 90		1 50	1 25
1.20								1.00	
4x4 3.10 3.85 6x5 6.15 7.70 4 1.50	4X4	3.10	3.85	6x5	6.15	7.70	4		1.50
5x2 3.70 4.60 6x6 7.35 9.20 5 2.00	5x2	3.70	4.60	6x6	7.35	9.20	5		2.00
	Ev2			3.14			_		
5x3 4.35 5.40 6 2.50	DAG	4.33	3.40				0		2.50

Ventilating Branches

		PRICE.	EACH		PRICE.	EACH
20166	Size	Stand-	Extra	Size	Stand-	Extra
	In.	ard	Heavy	In.	ard	Heavy
Comments of the Comments of th	2x2	\$.90	\$1.10	5x4	\$4.35	\$5.40
	3x2	1.15	1.40	5x5	4.35	5.40
	3x3	1.15	1.40	6x2	6.15	7.70
	4x2	1.15	1.40	6x3	6.15	7.70
	4x3	1.40	1.85	6x4	6.15	7.70
No. SP-116	4x4	1.40	1.85	6x5	6.15	7.70
	5x2	4.35	5.40	6x6	6.15	7.70
	5v3	4 35	5 40			

Tanned Ventilating Branches

()	appeu	veni	.mating t	pranches
Size Inches	Three Inches		Stand	PRICE, EACH—Extra Heavy
2 3	$1\frac{1}{4}$, 1 $1\frac{1}{4}$, 1	$\frac{1}{2}$, $\frac{2}{2}$	\$1.40 2.00	2.45
5	$1\frac{1}{4}, 1$ $1\frac{1}{4}, 1$	1/2, 2 1/2, 2	2,20 2.80	3.50
6	1/4, 1	2, 2	3.40	4.25



Crosses



No. SP-119 Plain



No. SP-120 With Side Inlet

No. SP-119 Plain			V	No. SP-: Vith Side		Extras Add to List	
Size In.	PRICE Std.	Extra Extra Heavy	Size In.	Price Std.	Extra Extra Heavy	Size Inlet In.	for Hub Inlet Each
2x2 3x2 3x3 4x2	\$1.25 1.65 1.65 1.80	\$1.55 2.00 2.00 2.15	5x5 6x2 6x3	\$4.95 6.15 6.15	\$6.15 7.70 7.70	2 3 4	\$1.00 1.25 1.50
4x3 4x4 5x2	1.80 1.80 4.95	2.15 2.15 6.15	6x4 6x5 6x6 8	6.15 6.15 6.15 9.00	7.70 7.70 7.70 13.50	5 6	2.00
5x3 5x4	4.95 4.95	6.15 6.15	10 12x10	16.20 22.70	22.65 29.15	•	• • • •

No. SP-127

Tapped	Sanitary	Crosses

Size	Thread	Stand-	Extra
Inches	Inches	ard	Heavy
2 3 4 5 6	1½, 1½, 2 1¼, 1½, 2 1¼, 1½, 2 1¼, 1½, 2 1¼, 1½, 2 1¼, 1½, 2	\$1.25 1.50 1.75 2.75 4.10	\$1.55 1.85 2.15 3.40 5.10

Cast Iron Soil Pipe Fittings Sanitary Crosses







No. SP-125 With Side Inlet

Size In	Paior Std.	e, Each Ex. Hy.	Size In.	Price Std.	s, Each Ex. Hy.	Size Inlet In.	Extras Add to List Inlets Each
2x2	\$1.25	\$1.55	5x5	\$4.95	\$6.15	2	\$1.00
3x2	1.65	2.00	6x2	6.15	7.70	3	1.25
3x3	1.65	2.00	6x3	6.15	7.70	4	1.50
4x2	1.80	2.15	6x4	6.15	7.70	5	2.00
4x3	1.80	2.15	6x5	6.15	7.70	6	2.50
4x4	1.80	2.15	6x6	6.15	7.70	U	2.50
5x2	4.95	6.15	8	9.00	13.50	•	
5x3	4.95	6.15	10	16.20	22.65	•	
5v4	4.95	6.15	12210	22 70	22.00	•	

Offsets









No. SP-135 2-inch Heel Inlet

Size	PRICE,	EACH-	Sine	Prici	EACH-
In.	Std.	Ex. Hy.	In.	Std.	Ex. Hy
2x 2	\$.60	\$.75	4x20	\$2.60	\$4.30
2x 4	. 60	.75	4x22	3.10	4.60
2x 6	75	.90	4x24	3.70	5.05
2x 8	.75	.90	4x26	4.35	5.45
2x10	1.00	1.25	5x 2	2.45	3.05
2x12	1.15	1.40	5x 4	2.45	3.05
2x14	1.25	1.55	5x 6	2.65	3.40
2x16	1.35	1.70	5x 8	3.00	3.80
2x18	1.70	2.15	5x10	3.50	4.00
2x20	2.00	2.45	5x12	3.65	4.45
2x22	2.20	2.75	5x14	5.05	6.30
2x24	2.45	3.05	5x16	5.35	6.60
2x26	2.70	3.35	5x18	5.85	7.25
3x 2	.95	1.15	5x20	6.15	7.55
3x 4	1.00	1.25	5x22	6.30	7.85
3x 6	1.10	1.40	5x24	6.50	8.15
3x 8	1.25	1.55	5x26	6.75	8.45
3x10	1.50	1.85	6x 2	3.35	4.15
3x12	1.65	2.00	6x 4	3.35	4.15
3x14	1.90	2.30	6x 6	3.35	4.15
3x16	2.10	2.60	6x 8	3.70	4.60
3x18	2.30	2.90	6x10	4.30	5.40
3x20	2.75	3.40	6x12	4.95	6.15
3x22	3.10	3.85	6x14	6.15	7.70
3x24	3.70	4.60	6x16	6.75	8.30
3x26	4.15	5.20	6x18	7.10	8.75
4x 2	1.00	1.25	6x20	7.40	9.20
4x 4	1.00	1.25	6x22	7.70	9.65
4x 6	1.10	1.40	6x24	8.10	10.10
4x 8	1.25	1.55	6x26	8.45	10.55
4x10	1.50	1.85	7x 4	10.10	12.60
4x12	1.60	2.00	7x 8	12.30	15.40
4x14	1.90	2.45	8x 4	8.00	11.00
4x16	2.00	3.40	8x 6	9.60	12.00
4x18	2.30	3.55	8x 8	10.40	13.00

Add to above Lists for 2-inch Vent or Heel or Side Inlet.....each \$1.00

For odd lengths use next highest list.

Cast Iron Soil Pipe Fittings Increasing Offsets To Offset 6 Inches





No. SP-137			No. SP-138			
Hub and Spigot			Tapped for Iron Pipe			
Size Inches 1½x4 2 x4 3 x4	PRICE, Hub and Spigot Ex. Hy. \$2.00 2.80	EACH Tapped for I. P. Ex. Hy. \$2.10 2.25	Size Inches 4x5 4x6 6x8	Hub and Spigot Ex. Hy. \$3.00 3.25 4.00	Tapped for I. P Ex. Hy	

Eighth Bend Offsets



No.	SF	2-1	39
-----	----	-----	----

Size	Price	e, Each	Size	Price	EACH
Inches	Std.	Ex. Hy.	Inches	Std.	Ex. Hy.
$2_{\mathrm{X}} \; 2$	\$.60	\$.75	4x 8	\$1.25	\$1.55
$2_{\mathrm{X}} 4$.60	.75	4x10	1.50	1.85
2 _X 6	.75	.90	4×12	1.60	2.00
2_X 8	.75	.90	4x14	1.90	2.45
2x10	1.00	1.25	4x16	2.00	3.40
2x12	1.15	1.40	4x18	2.30	3.55
2x14	1.25	1.55	4x20.	2.60	4.30
2x16	1.35	1.70	4x22	3.10	4.60
2x18	1.70	2.15	4x24	3.70	5.05
2x20	2.00	2.45	5x 4	2.50	3.15
3x 2	.95	1.15	5x 6	2.85	3.55
3x 4	1.00	1.25	5x 8	3.15	3.95
3x 6	1.10	1.40	5x10	3.35	4.20
3x 8	1.25	1.55	5x12	3.70	4.65
3x10	1.50	1.85	5x14	5.25	6.55
3x12	1.60	2.00	6x 4	3.45	4.30
3x14	1.90	2.30	6x 6	3.45	4.30
3x16	2.10	2.60	6x 8	3.80	4.75
3x18	2.30	2.90	6x10	4.50	5.60
3x20	2.75	3.40	6x12	5.10	6.35
4x 2	1.00	1.25	6x14	6.40	8.00
4x 4	1.00	1.25	6x16	6.90	8.60
4	4 40	4 40			

Double Hubs

		PRICE,				EACH
	Size In.	Stand- ard	Extra Heavy	Size Inches	Stand- ard	Extra Heavy
	2	\$.50	\$.60	6	\$1.85	\$2.45
	3	. 65	.90	8	2.50	3.50
N. CD 140	4	.70	.90	10	3.90	4.85
No. SP-140	5	1.25	1.55			

Single Hubs

	PRICE.	EACH		PRICE	EACH	
Size	Stand-	Extra	Size	Stand-	Extra	N6.5 (S)
In.	ard	Heavy	Inches	ard	Heavy	
2	\$.40	\$.45	6	\$1.15	\$1.55	
3	.50	.75	8	2.50	3.50	
4	.60	.75	10	3.80	4.85	283
5	1.00	1.25	12	5.40	9.20	No. SP-141

Reducers

450	Size In.	Price Stand- ard	Extra Extra Heavy	Size Inches	Price, Stand- ard	Each Extra Heavy
	3x2 4x2 4x3	\$.40 .40 .45	\$.45 .45 .55	6x3 6x4 6x5	\$.85 .85	\$1.00 1.00 1.00
No. SP-142	5x2 5x3 5x4 6x2	.60 .60 .60	.75 .75 .75	8x6 10x8 12x10 15x12	2.50 4.85 6.76 13.30	4.25 6.20 10.80 22.30

Cast Iron Soil Pipe Fittings

Plugs

			-			
			, Each		PRICE	EACH
Association and Company of the Compa	Size	Stand-	Extra	Size	Stand-	Extra
	Inches	ard	Heavy	Inches	ard	Heavy
	2	\$.25	\$.30	8	\$1.20	\$1.50
No. SP-145	3	.40	. 45	10	2.15	3.25
1101 01 -140	4	. 45	.60	12	3.25	4.30
	5	. 60	.75	15	5.60	7.00
	6	.75	.90			
		S	leeves			* * * *

	PRICE, I	
Size	Stand-	
Inches	ard	

Ch.1	J. RICE, 1			PRICE	. EACH					
Size	Stand-	Extra	Size	Stand-	Extra					
Inches	ard	Heavy	Inches	ard	Heavy					
2	\$.60	\$.75	6	\$1.85	\$2.30					
3	. 75	.90	8	2.50	3.50					
4	.75	.90	10	3.80	4.85	No. SP-146				
5	1.25	1.25	12	5.40	9.20					
	Thimbles									

Thimbles

	C4 P	PRICE	, Еасн		PRICE	EACH
	Size	Stand-	Extra	Size	Stand-	Extra
	Inches	ard	Heavy	Inches	ard	Heavy
	2	\$.60	\$.75	6	\$1.85	\$2.30
No. SP-148	3	.75	.90	8	2.50	3.50
NO. 3F-145	4	.75	.90	10	3.80	4.85
	5	1.25	1.55	12	5.40	9.20

Vent Cans

		ACIIL (Japa	
	Size Inches 2 3 4		EACH With Set Screw \$.60 .65	No. SP-151
No. SP-150, Plain	5 6	1.85 2.00	1.25 1.55	With Set Screw
and the second				

7	Fresh A	ir Inlets	
	Size Inches	Stand- ard	Extra Heavy
	4	\$1.10	\$1.40
	4x12	1.60	2.00
No. SP-156			,

T Saddles and T Saddle Hubs



	1401 01	-			
	T Saddle	95	T,	Saddle Hubs	
	PRICE, 1	EACH		Prici	EACH
Size	Stand-	Extra .	Size	Stand-	Extra
Inches	ard	Heavy	Inches	ard	Heavy
2x2	\$.75	\$.95	5x4	\$1.00	\$1.25
3×2	.80	1.00	5x5	1.00	1.25
3×3	.80	1.00	6 x 2	1.00	1.25
4x2	.80	1.00	6x3	1.00	1.25
4x3	.90	1.10	6x4	1.00	1.25
4×4	90	1.10	6x5	1.05	1.30
5x2	.90	1.10	6x6	1.15	1.40
5x3	.95	1.15		4 4 4 4	

Y and Half Y Saddle Hubs





No. SP-161, Y Hubs



No. SP-162, Half Y Hubs

	PRICE.	PRICE, EACH			
Size	Stand-	Extra	Size	Stand-	Extra
Inches	ard	Heavy	Inches	ard	Heavy
2x2	\$.80	\$1.00	5x4	\$1.05	\$1.30
3x2	.90	1.10	5x5	1.05	1.30
3x3	.90	1.10	6x2	1.15	1.40
4x2	.90	1.10	6x3	1.15	1.40
4x3	. 95	1.15	6x4	1.15	1.40
4×4	.95	1.15	6x5	1.25	1.55
5x2	.95	1.15	6x6	1.25	1.55
5x3	1.00	1.25			

Cast Iron Soil Pipe Fittings **Extension Pieces**

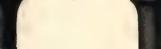


No. SP-163

	PRICE	PRICE, EACH			
Size	Stand-	Extra	Size	Stand-	Extra
Inches	ard	Heavy	Inches	ard	Heavy
2x 4	\$.60	\$.75	4x18	\$2.45	\$3.05
2x 6.	.60	.75	4x20	2.95	3.70
2x 8	.75	.90	4x22	3.40	4.30
2x10	.90	1.10	4x24	3.70	4.60
2x12	1.00	1.25	5x 4	1.85	2.30
2x14	1.15	1.40	5x 6	1.85	2.30
2x16	1.25	1.55	5x 8	2.10	2.60
2x18	1.40	1.70	5x10	2.30	2.90
2x20	1.50	1.85	5x12	2.45	3.05
2x22	2.00	2.45	5x14	2.70	3.40
2x24	2.50	3.05	5x16	2.95	3.70
3x 4	1.00	1.25	5x18	3.20	4.00
3x 6	1.00	1.25	5x20	3.70	4.60
3x 8	1.10	1.40	5x22	4.20	5.25
3x10	1.25	1.55	5x24	4.70	5.85
3x12	1.50	1.85	6x 4	2.45	3.05
3x14	1.75	2.15	6x 6	2.45	3.05
3x16	1.95	2.45	6x 8	2.70	3.40
3x18	2.20	2.75	6x10	2.95	3.70
3x20	2.45	3.05	6x12	3.20	4.00
3x22	2.75	3.40	6x14	3.45	4.30
3x24	2.95	3.70	6x16	3.90	4.90
4x 4	1.25	1.55	6x18	4.45	5.55
4x 6	1.25	1.55	6x20	4.90	6.15
4x 8	1.40	1.70	6x22	5.50	6.90
4x10	1.50	1.85	6x24	6.15	7.70
4x12	1.70	2.00	6x30	7.85	9.80
4x14	1.85	2.30	6x36	8.00	. 10.00
4x16	2.15	2.60			****

Increasers





No. SP-167 Tapped for Iron Pipe

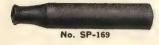
Size	PRICE	E, EACH	8	ise	Pric	E, EACH
Inches	Std.	Ex. Hy.	Inc	ches	Std.	Ex. Hy.
2x 3	\$.90	\$1.10	11/	4x2	\$.60	\$.75
2x 4	.90	1.10	11/	2x2	. 60	.75
2x 5	1.25	1.55	11/	x3	1.40	1.70
2x 6	1.85	2.30	11/	x4	1.50	1.85
3x 4	1.85	2.30	11/	x4	1.50	1.85
3x 5	1.85	2.30		x5	2.10	2.45
3x 6	1.85	2.30	2	x3	1.40	1.70
4x 5	1.85	2.30	2	x4	1.50	1.85
4x 6	1.85	2.30	2	x5	2.10	2.45
4x 8	1.85	2.30	2	x6	2.40	3.00
5x 6	2.45	3.05	3	x4	1.85	2.30
5x 8	2.45	3.05	3	x5	2.10	2.60
5x10	2.65	3.35	4	x5	2.50	3.10
6x 7	2.25	3.85	4	x6	2.90	3.60
6x 8	2.00	5.00	5	x6	3.30	4.10
6x10	3.40	4.25				
8x10	4.35	7.00				
8x12	7.35	9.20				
10x12	9.20	11.50				

Short Tapped Increasers

	Size Inches	Price Std.	Ex. Hy.	Size Inches	Pric Std.	Ex. Hy.
	$\frac{1^{1}/_{4}x^{2}}{1^{1}/_{2}x^{2}}$	\$.75 .75	\$.90	2x3 2x4	\$.90 1.00	\$1.10 1.25
	$\frac{1\frac{1}{4}x4}{1\frac{1}{2}x3}$	1.00	1.25 1.10	3x4 2x5	1.40 1.25	1.75 1.55
No. SP-168	1½x4 1½x5	1.00	1.25	3x5 2x6	1.60	2.00

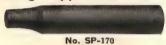
Cast Iron Soil Pipe Fittings

Long Plain Increasers for Calking



Size	Length	Daton	EACH	Size	Length	Daran	EACH
In.	In,	Std.	Ex. Hy.	In.	In.	Std.	Ex. Hv.
2x3	30	\$1.60	\$2.00	4x5	30	\$2.00	\$2.45
2x4	24	1.25	1.55	4x5	36	3.70	4 60
2x4	30	1.65	2.00	4x6	24	3.70	4 60
2x4	36	2.00	2.45	4x6	30	3.70	4.60
2x4	48	2.50	3.10	4x6	36	4.30	5.40
3x4	12	1.25	1.55	4x6	48	4.95	6.15
3x4	24	2.00	2.45	5x6	12	1.95	2.45
3x5	24	2.00	2.45	5x6	30	5.45	6.80
4x5	12	1.60	2.00	5x7	48	12.30	15.40
4x5	24	2.30	2.85	0.25			40.10

Long Tapped Increasers



			Tapped	PRICE	
	ze	Length	I.P. Thread	Stand-	Extra
Inc	hes	Inches	Inches	ard	Heavy
11/	2X4	24	$1\frac{1}{2}$	\$2.25	\$2.75
2	x4	24	2	2.25	2.75
2	x4	30	2	2.40	3.00
2	x4	36	2	2.60	3.25
2	x4	48	2	3.00	3.75

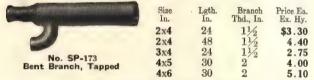
Long Increasers for Calking



No. SP-171 Tapped One Side

No. SP-172 Tapped Both Sides

Size In.	Lgth. In.	Outlet Thd., In.	PRICE Std.	Ex. Hy.	Size In.	Lgth.	Outlet Thd., In.		Ex. Hy.
2x4	24	$1\frac{1}{2}-2$	\$2.45	\$3.05	2×4	24	$1\frac{1}{2}$	\$2.85	\$3.55
2x4	48	$1^{\frac{1}{2}}$	3.30	4.15	2x4	48	$1\frac{1}{2}$	3.70	4.65
3x4	24	$1\frac{1}{2}$	2.00	2.50	3x4	24	$1\frac{1}{2}$	2.40	3.00
4x5	30	$1\frac{1}{2}-2$	3.00	3.75	4x5	30	2	3.40	4.25
4x6	30	2	3.40	4.25	4x6	48	2	5.45	6.80
4x6	36	$1\frac{1}{2}$	3.60	4.50	5x6	30	2	4.30	5.35
4x6	48	2	5.05	6 30	5x6	36	2	4.60	5.75
5x6	30	2	3 90	4.85					
E C	20	0	4 00	E 05					



Connolly Tee Saddle Hubs

				_		
Size In.	PRICE Std.	, Елсн Ех. Ну.	Size In.	PRICE, Std.	Еасн Ех. Ну.	
2x2	\$.75	\$.95	5x4	\$1.00	\$1.25	
3x2	.80	1.00	5x5	1.00	1.25	
3x3	. 80	1.00	6x2	1.00	1.25	
4x2	.80	1.00	6x3	1.00	1.25	N. Control of the Con
4x3	.90	1.10	6x4	1.00	1.25	
4x4	.90	1.10	6x5	1.05	1.30	V
5x2	.90	1.10	6x6	1.15	1.40	No. S
F 0	Off	9 9 2				110. 0

Connolly Y Saddle Hubs



zedžena s	602	Saturate	
No.	SP.	-178	

Size In.		Ex. Hy.	Size In.	PRICE, Std.	Each Ex. Hy.
2x2	\$.80	\$1.00	5x4	\$1.05	\$1.30
3x2	. 90	1.10	5x5	1.05	1.30
3x3	.90	1.10	6x2	1.15	1.40
4x2	.90	1.10	6x3	1.15	1.40
4x3	. 95	1.15	6x4	1.15	1.40
4x4	. 95		6x5	1.25	1.55
5x2	. 95	1.15	6x6	1.25	1.55
5×3	1 00	1 25			

Cast Iron Soil Pipe Fittings

Plain Pipe Bands



Size In.

2x2

Size		EACH	Size	PRICE.	EACH
in.	Std.	Ex. Hy.	In.	Std.	Ex. Hy.
2	\$.90	\$1.10	5	\$ 1.35	\$1.70
3	1.00	1.25	6	1.60	2.00
4	1.15	1.40			

Pipe Bands with Inlet



No. SP-180 With T Branch

\$1.05

PRICE, EACH Std. Ex. Hy.

\$1.30



No. SP-181 With Y Branch								
Size Inches	Std. Pare	DE, EACH Ex. Hy.						
5x4	\$1.75	\$2.15						
5x5	1.85	2.30						
6x2	1 95	2 45						

5x 2 5x 3	1.60 1.60	1.85 2.00 2.00	6x5 6x6	2.20 2.50	2.75 3.10
	Plain	Pipe Res	sts Tap	ped Pipe	Rests
	Sime	PRICE, EAC	H		
	In. 2		Hy.	A	

		1 1 1	C IICSES	I apped FI	pe nests
	Size	PR	ice, Each Plain		
	In.	Std.	Ex. Hy.		
	2	\$.30	\$.40		
	3	.40	. 45	No. SP	102
	4	.40	.45		
	5	.75	.90	Size inches	4 6
	6	.95	1.15	Price, Std ea.	\$.75 \$1.45
N - 60 100	8	1.75	2.25	" Ex. Hy. "	.95
No. SP-182	10	2.15	3.25	•	

Floor Plates

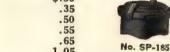


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Size Inches	Stand-	Each Extra Heavy	Size Inches	Price, Stand- ard	Each Extra Heavy
2	\$.40	\$.50	5	\$.80	\$1,00
3	.60	.75	6	1.00	1.25
4	.75	.90		****	

Trap Covers PRICE, EACH—Extra Heavy Standard \$.25 \$.30 .30 .35 .40 .50 .45 .55 .55 .65 .90 1.30 1.05 1.60



Bar Strainers



Size Inches	Price Each	Size Inches	Price Each
2	\$.10	5	\$.25
3	.15	6	.30
4	.20		

Pipe Hooks

Size Inches	Price Each	Size	Price)
-		Inches	Each	J
2	\$.08	5	\$.16	No. SP-187
3	.11	6	.20	
4	.13			

Cast Iron Soil Pipe Fittings Plain Traps



No. SP-188 Full S Trap



No. SP-189 Three-quarter S Trap



No. SP-190 Half S Trap

	•	
ize	PRICI	E, EACH
In.	Std.	Ex. Hy.
2	\$.90	\$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Traps with Top Vent



No. SP-191 Full S Trap



No. SP-192 Three-quarter S Trap

Size Inches	PRICE Std.	Ex. Hy.	Size Inches	Price Std.	Ех. Ну.
		\$1.50	5x4	\$4.00	
3x2	1.35	1.70	5x5	4.00	5.00
3x3	1.35	1.70	6x2	4.80	6.00
4x2	2.20	2.75	6x3	4.80	6.00
4x3	2.20	2.75	6x4	4.80	6.00
4×4	2.20	2.75	6x5	4.80	6.00
5x2	4.00	5.00	6x6	4.80	6.00
5x3	4.00	5.00			



No. SP-193 Half S Trap

Traps with Handhole and Cover



No. SP-194 Full S Trap



No. SP-195 Three-quarter S Trap



ize	PRICE, EACH-	
In.	Std.	Ex. Hy.
2	\$1.25	\$1.55
2	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75
9	10.10	10.10

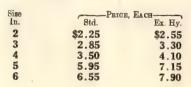
Traps with Handhole and Cover and 2-inch Heel Inlet



No. SP-197 Full S Trap



No. SP-198 Three-quarter S Trap





No. SP-199 Half S Trap

Cast Iron Soil Pipe Fittings

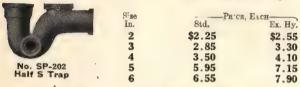
Traps with Handhole and Cover and 2-inch Side Inlet







No. SP-201 Three-quarter S Trap



Traps with Brass Trap Screw



No. SP-203 Full S Trap

	A ANN	
		7
No. of Contract of		

No. SP-204 Three-quarter S Trap

Size Trap	Size Tra	PRICE,	EACH
In.	Screw I	n. Std.	Ex. Hy.
2	2	\$2.40	\$2.60
3	2	2.65	2.90
4	2	3.00	3.35
5	4	6.80	7.90
6	- 4	7.45	8.65
_	-		
8	4	12.50	15.50



Traps with Top Vent and Brass Trap Screw



No. SP-206 Full S Trap



No. SP-207 Three-guarter S Trap

0	
No.	SP-208
	C Tran

	PRICE,		Size	PRICE,	EACH
In.	Std	Ex. Hy.	In.	Std.	Ex. Hy.
2x2	\$2.70	\$3.00	5x4	\$6.50	\$7.50
3x2	2.85	3.20	5x5	6.50	7.50
3x3	2.85	3.20	6x2	7.30	8.50
4x2	3.70	4.25	6x3	7.30	8.50
4x3	3.70	4.25	6x4	7.30	8.50
4x4	3.70	4.25	6x5	7.30	8.50
5x2	6.50	7.50	6x6	7.30	8.50
5x3	6.50	7.50			

Running Traps



No. SP-209 Plain



No. 5	SP-210
with H	and hole
	Cover

Size		EACH -	Size	PRICE,	
In.	Std.	Ex. Hy.	Inches	Std.	Ex. Hy.
2	\$.90	\$1.10	2	\$1.25	\$1.55
300 1 h -	4 1.15	1.40	3	1.85	2.30
4	1.50	1.85	4	2.50	3.10
5	4.30	5.40	5	4.95	6.15
6	4.95	6.15	6	5.55	6.90
8	10.00	13.00	8	10.75	13.75

Cast Iron Soil Pipe Fittings Running Traps



No. SP-211 With Hub Vent



No. SP-212 With Double Hub Vent

Size	Perc	PRICE, EACH		,	
Inches	Std.	Ex. Hy.	Size Inches	Std.	Е, Елсн Ех. Ну.
2x2	\$1.20	\$1.50	2x2	\$1.60	\$2.00
3x2	1.35	1.70	3x2	1.80	2.25
3x3	1.35	1.70	3x3	1.80	2.25
4x2	2.20	2.75	4x2	2.60	3.25
4x3	2.20	2.75	4x3	2,60	3.25
4x4	2.20	2.75	4x4	2.60	3.25
5x2	4.00	5.00	5x2	4.80	6.00
5x3	4.00	5.00	5x3	4.80	6.00
5x4	4.00	5.00	5x4	4.80	6.00
5x5	4.00	5.00	5x5	4.80	6.00
6x2	4.80	6.00	6 x 2	5.60	7.00
6x3	4.80	6.00	6x3	5.60	7.00
6x4	4.80	6.00	6x4	5.60	7.00
6x5	4.80	6.00	6x5	5.60	7.00
6x6	4.80	6.00	6x6	5.60	7.00
8x4	11.60	14.50	8x4	12.80	16.00
8x6	12.00	15.00	8x6	14.00	17.00
8x8	12.00	15.00	8x8	14.00	17.00
10x6	19.45	25.90	10x6	21.60	28.10
10x8	23.00	29.00	12x6	29.35	36.70
12x6	29.35	36.70	12x8	31.10	38.90
15x6	67.00	84.00	15x15		150.00
15x8		130.00		* * * * *	

Running Traps



No. SP-213 With Y Branch and Vent



No. SP-214
With Half Y Branch

			and were		
Size Inches	PRIOR	Ex. Hy.	Size Inches	Std. PRICE	Ex. Hy.
4x4	\$4.95	\$6.15	6x5	\$9.85	\$12.30
5x4 5x5	8.60	10.75 10.75	6x6 8x6	12.30 13.80	15.35 17.25
6x4	6.50	8.00			

Sisson Insertable Joints



	No. SP-253	
Size Inches	Std.	Ex. Hy.
2	\$1.40	\$1.50
3	1.50	1.70
4 5	1.80	2.00
6	2.10 2.60	2.30 2.80
8	****	10.00

With this joint a satisfactory connection can be made when a leak is discovered in a pipe or fitting already connected; or if a new fixture is to be connected with a line of pipes already in.

To install, cut out of soil pipe the length of fitting required to insert plus 11½ inches for this joint. Slip the lead ring over the pipe above and push the joint up as far as possible and drop this joint down. The lead ring will drop into joint and rest upon shoulders. Insert packing.

No. 181 Deep Seal P Traps

Wisconsin Pattern



Depth of seal, 5 inches.

Size	Price	Size	Price
Inches	Each	Inches	Each
2	\$1.55	5	\$4.40
3	2.20	6	5.90
4	3.15		
		* *	

No. 182 Deep Seal Running Trap with Vent

Wisconsin Pattern

Extra Heavy

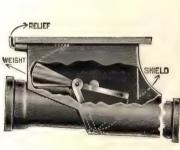


One vent on hub side of rap.

Depth of seal, 5 inches.

	PRICE,	EACH-
Size	2-Inch	4-Inch
Inches	Vent	Vent
2	\$2.00	
3	2.50	
4	****	\$3.50
5	4 * * *	5.50
6		6.50

No. 1 Marsh Back Water Valve



		Lgth.	Ht.
	Man-	End	from
Size		to End	Hub
In.	In.	In.	Ctr., In.
4	6x10	21	71/2
6	7x13	24	10
8	9x15	29	1034
9	10x18	31	121/4
12	211/4×141/	436	15

Size In.	Price Each	Threaded End
4	\$43.00	\$1.25
6	57.00	1.50
8	80.00	1.75
9	90.00	2.00
12	220.00	3.00

Extra

No. E-1 Palmer Sewer Valves



With Handhole and Cover

Size In.	Price Each	Size In.	Price Each
2	\$6.00	6	\$10.00
3	6.50	8	15.00
4	7.50	10	30.00
5	9.00	12	50.00

No. E-5 Palmer Old Style Valves For Cast Iron or Tile Pipe

	FOI	Cast	11011	VI	1116	1 Ibc	
Size	Price		Size			Price	
Inches	Each		Inches			Each	
2	\$1.00		9			\$6.00	
3	1.20		10			15.00	
4	1.60		12			20.00	
5	2.20		15			25.00	
8	2.40		18			40.00	
8	3.80		0 0				



Blake Y Fittings



With So-easy-to-remove Cover

Sizeinches	2	4
Price, Standardeach	\$2.70	\$5.50
" Extra Heavy"	2.80	5.60

With Brass Screw Plug Cover

Size	inches	2	4
Price,	Standardeach	\$2.70	\$5.50
"	Extra Heavy "	2.80	5.60

No. K-1790 Blake Economy Stack Fittings



All are extra
heavy but
made to fit
standard pipe
also.

Cleanout plugs are iron pipe thread, heavy and have large square heads. Openings are suitable for test plugs



Front Cleanout

		occo p			
Size Inches	Cleanout	Price Each	Size Inches	Cleanout	Price Each
21301400			211011003	CIOUILOUV	
2	Front	\$2.40	4	R. H.	\$4.90
4	Front	4.90	2	L. H.	2.40
2	R. H.	2.40	4	L. H.	4.90

No. K-1844 Blake Cleanout or Test Tees

With Brass Screw Plug Cover



Also furnished with brass screw flange cover.

This test tee will take a 90 degree testing plug. A test tee can be calked in on each story and a test made on each floor separately.

		PRICE.	Each	
	WITE	BRASS	WITH	BRASS
		G COVER -		COVER
Size	Extra		Extra	
Inches	Heavy	Standard	Heavy	Standard
2	\$1.80	\$1.80	\$1.90	\$1.90
3	2.80	2.80	2.94	2.94
4	3.10	3.10	3.26	3.26
5	7.70	7.70	8.08	8.08
6	9.50	9.50	9.98	9.98

No. K-1686 Blake Insertable Joints



For Durham Work

Tapinches	11/4	11/2	2	2	4
Tapinches Hubinches	2	2	2	4	4

Blake Deep Seal Floor Drains

Without Back Water Valve Open Pattern Trap Spigot End for Soil Pipe



						- PRICE, EACH	
	St	ZE. IN.			Cast	Fin.	N. P.
	Connec		DEPTH.	Tw.	Iron	Brass	Brass
No.	tion	Top	Over All	Seal		Cover	Cover
K-310	2	81/2	$10\frac{1}{2}$	4	\$4.00	\$10.00	\$12.00
K-310	3	$10\frac{1}{2}$	13	4	10.00	20.50	23.00
K-310	4	$12\frac{1}{2}$	15	4	13.25	31.00	34.00
Can be	e furr	ished	with tap	ped	outlet for	iron pipe.	

Blake Deep Seal Floor Drains

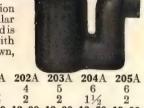


With Back Water Valve Open Pattern Trap Spigot End for Soil Pipe

						-PRICE, EA	78
		te, In.		_	Cast	Fin.	N. P.
	Connec	-	DEPTH.	IN.	Iron	Brass	Brass
No.	tion	Top	Over All	Seal	Cover	Cover	Cover
K-310	2	81/2	$10\frac{1}{2}$	4	\$6.30	\$12.30	\$14.00
K-325	. 3	101/2	13	4	13.30	23.80	26.20
K-335	4	121/2	15	4	17.40	34.90	38.00
Can	be furn	ished	with tap	ned	outlet for	iron nir	ne.

No. 200A Josam Double Drainage Trap and Drain

For shower, urinal and floor drains for concrete, tile, marble or any composition floors. Has brass strainer, and collar which screws into body of drain and is adjustable to suit floor level. If with flashing clamping device as shown, add \$1.00 to list.



No	200A	201A	202A	203A	204A	205A
Strainer inches	4	5	4	5	6	6
Outlet "	11/2	11/2	2	2	11/2	2
Price each	\$10.50	12.00	12.00	12.00	12.50	13.00
No	206A	207A	208A	209A	210A	
Strainer inches		6	6	7	8	
Outlet "	3	3 .	4	4	4	
Price each	\$15.00	16.00	19.00	21.00	23.00	

No. 100 Josam Double Drainage Floor or Shower Drains

An all brass drain designed for use in cement, tile, terrazzo. mosaic, mastic or other composition floors. Does not have adjustable strainer.

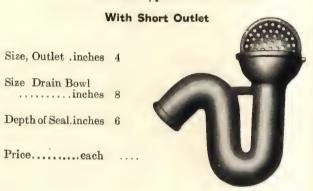
For use in residences, hotels, schools, institutions and public buildings where lack of floor depth will not permit use of trap.

	No.	Strainer In.	Outlet In.	Price Each
	100	2	2	\$6.50
(Para Singal Alamana	101	3	2	7.00
	102	3	3	8.00
	103	. 4	3	9.50
and the second	104	5	4	11.00

Made with either male or female threaded outlet.



No. 254 Ohio 3/4 S Floor Drains



No. 229 Ohio Cellar Drains



With P trap. Outlet, 4 inches. Drain bowl, 8 inches. Depth seal, 6 inches.

Cast Iron Bell Tran Cassnools	_	_	-	0 1
	-	_		•

With Side Outlet and Hinger Strainer



No	1	2	3
Sizeinches	6x6	9x9	13x13
Outlet inches	2	3	4
Weight	Light	Light	Heavy
Price each	\$3.00	\$6.00	\$12.00
Tapping For Iron Pipe. Add	1.00	1.40	2.00
		- 7 - 0	

Cast Iron Cesspools with Bell Trap



	124	
	No. 200	
Wi	th Loose Stra	iner
Size	ine	ches
Out	let	66
Price,	Loose, Std.	each
66	" Ex. Hy	66
66	Hinged, Std	44
66	Loose, Ex. Hy	и

If with Threaded Outlet add "



			N-	o. 202 ged St	
0.0		W	Ith Hin	ged St	rainer
6x6	9x9	12x12	12x12	13x13	13x13
2	3	3	4	3	4
\$.75	\$1.00	\$1.35	\$2.00	\$2.20	\$2.40
1.15	1.40		3.40		4.00
	1.15	1.80	2.60	2.80	3.00
1.20			3.60		4.40
. 40	. 60	. 60	.80	. 60	.80

No. 230 Extra Heavy Cesspools With Bell Trap and Grating



Sizeinches Depth	8x8	10x6	12x12 10	
Price, Plain each "Galvanized	\$3.00	\$3.00	\$3 75	\$4 E0

No. 251 Stable Cesspools



Size	Outlet for	Price	Tapped for	Price
Inches	Soil Pipe, In.	Each	I.P., In,	Each
12x12 14x14 16x16 16x16	2 2 2 4	\$3.75 4.00 4.50 4.50	2 2 2	\$3.75 4.00 4.50 5.00

Slop Sinks and Hoppers



Price, Slop Hopper, 12 Inches Deep.....each \$3.50

.....inches

No. K-1135 Blake Extra Heavy Garage Drains



Can be furnished without vent, or one or two vent openings, but two vents will be shipped unless other-wise ordered. Made extra heavy in small and large pattern, and to re-ceive 4-inch extra heavy pipe. For use in private and public garages, etc. Vent connections are for 2-inch extra heavy pipe. Water seal on small pattern is 6 inches, large pattern, 9 inches.

			Water			PRICE,	EACH Without
Top	Depth	Strainer	Seal	Outlet	Vent	*	Bell and
Inches	Inches	Inches	Inches	Inches	Inches	Complete	Bucket
16	18	$14\frac{5}{8}$	6	4	2	\$62.00	\$48.00
21	30	19	9	4	2	102.00	78.00

No. K-1104 Blake Round Ice Box Drains



Has loose cover. Tapped for 34, 1, 114 or 112-inch iron pipe. Measures 8 inches across top, 21/2 inches in total depth. Weight, 41/2 pounds. Black-dipped, for 11/4-inch I. P. furnished unless otherwise specified.

Style	Black-Dipped	Aluminum-Dipped	Galv.
Priceeach	\$.85	\$1.00	\$1.40

No. K-1108 Blake Oblong Ice Box Drains

Has loose strainer. Is 10 inches long. For 3/4, 1, 11/4 or 1½-inch iron pipe. Depth 2½ inches. Unless specified, black-dipped for 1¼-inch I. P. shipped.



Style Priceeach	Black-Dipped	Aluminum-Dipped	Galv.
Price each	\$.90	\$1.05	\$1.55

Blake Cast Iron Rings and Covers

For Cistern or Garage Drains



These rings and covers are heavy, with covers reinforced underneath to stand heavy trucks and cars passing over them. The covers fit flush into the ring. The rings have prongs to go over outside of bell of tile pipe, while a rib around inside bottom fits on the inside of bell.

No.	For Pipe Size, In.	Diam. Over All Inches	Approx. Ship. Weight, Lbs.	Price Each
K-1700	12	15	17	\$2.50
K-1700	15	18	24	4.25
K-1700	18	21	32	7.00
K-1700	20	24	44	9.00
K-1700	24	28	88	14.00

No. K-2116 Blake Special C. I. Closet Waste Fittings

With 2-Inch Slip Collar Extra Heavy



rice
ach
.40
.70
.40
.10
.50
.80
.80
֡

Josam Double Drainage Drains

With Clamping Ring and Eccentric Clamps for Showers, Urinals and Floors



Designed for shower, urinal and floor installations where specifications call for the use of flashing material to prevent seepage caused by expansion or contraction.

The Josam eccentric nut clamp locks the flashing ring securely upon any thickness of ma-

terial without the use of screws.

Constructed of cast iron with adjustable screw-in type of

brass finish.

ľ	Made	with	either	male	or	female	threa	ded	outlet	Ġ.

No	. 300C 3010	302C
Outletinches	2 3	4
Priceeach	\$7.00 9.00	0 10.50

No. 302B Josam Swimming Pool Overflow Drains



For use as main outlet or drip floor drain. When set in side wall of pool will make an overflow drain.

Has brass rectangular frame and removable brass strainer with nickel-plated or polished finish.

Body is cast iron with flange and clamping ring for waterproofing membrane. Has adjustable collar to permit for variations in thickness. Drain furnished with male or female threaded outlet.

Strainer		 	5.		 							.inches	61/2×91/2
Outlet, Iron	Pipe									ě		. 44	4

Price, No. 302B.....each \$14.00
Galvanized or all brass body can be furnished at added

No. 400S Josam Roof Drains No Flashing Required



Designed to apply to either concrete or wood roof deck.

Roofing felts are joined to drain with an improved type clamping ring which has four adjustable bronze clamping posts with brass set screws. A perfectly water-tight connection is made between roofing felts and body of drain.

Has removable combined

Has removable combin sediment cup and strainer.

Threaded outlet.

Outlet	Price	Outlet	Price	Outlet	Price
Inches	Each	Inches	Each	Inches	Each
2 3	\$14.00 14.00	4 5	\$14.00 16.00	6 8	\$18.00 26.00

Josam Expansion Joint Connection With Brass Sleeve



Can be used with any Josam drain. Body is of heavy cast iron. Constructed so as to allow expansion or contraction of 1½ inches each way in the line, or a total variance of 3 inches.

Heavy-gauge brass sleeve has a smooth, non-corrosive bearing surface which works freely against a graphite-saturated, round, braided, pure asbestos packing ring.

Made for threaded pipe installations is shown.

Size	Price	Size	Price
Inches	Each	Inches	Each
3	\$4.50	6	\$7.00
4	5.00	8	10.00
5	6.00		

No. 2000 Blake Cast Iron Closet Bends With 2-inch Deep Slip Collar



These bends can be furnished with right or left hand tapping only or both sides. When ordering specify right or left hand tapping. In description, short inlet means 4 inches high from center of bend and long inlet is 5 inches high.

Size In.	Description	PRICE, Short Inlet	EACH Long
4x12	Plain	\$2.40	Inlet \$2.50
4x16	44	2.50	2.70
4x12	Tapped 2 Hole Opposite	2.70	2.80
4x16	2 " "	2.80	3.00
4x12	" 2 " Offset	2.70	2.80
4x16	2 "	2.80	3.00
4x12 4x16	with Y Tapping	2.70	2.80
4X16	" 2 " " Y	2.80	3.00

Price includes 2-inch iron slip collar with each bend.

Blake Iron Slip Collars For Closet Bends





No. 2050, Notched Top

No. 2065, Slotted Top

Can be furnished with notched or slotted top as shown or with screw holes.

with screw n	oles.		
Depth, In.	Price, Each	Depth, In.	Price, Each
2	\$.45	4	\$.70
$2^{1/2}$. 50	5	1.00
3	. 60	6	1.30

Type 6-L Holt Roof Connections



For wood or concrete roof-deck! Has internal expansion joint, heavy cast iron casing with extending flange to support it on roof deck, 16-ounce copper flashing flange and cast iron globe strainer. Has brass locking dogs for roofs over 3 inches thick. For roof under 3 inches a sliding lock collar is furnished.

Calked lead joint is made between leader pipe and connection.

2200	VACIAL.						
Size In.	Size Opening in Roof In.	Price Each	Add for Cast Brass or Aluminum Strainer	Size In.	Size Opening in Roof In.	Price Each	Add for Cast Brass or Aluminum Strainer
Atta	A.A.A.u	THEOREM	Shamer	Ji. Li La	111.	Each	premier
3	$6\frac{1}{2}$	\$16.50	\$1.00	6	91/2	\$23.25	\$2.00
4	$7\frac{1}{2}$	18.00	1.50	8	$11\frac{1}{2}$	34.25	2.50
5	$8\frac{1}{2}$	19.75	1.50				

Type 1 Holt Roof Connections

For wood or concrete roof-deck. Has cast iron strainer, three guard east iron gravel stop flange-ring,

strainer attachment, 16-ounce copper flashing, No. 13 S. W. G. seamless copper pipe with roof lock fittings and expansion joint with spigot end or tapped for

iron pipe.
Roof Length
Thick- Connec-Thick- Connectors tion
Inches Inches 3

Thick- Connectors Price, Each
For Drain Pipe, Inches

5 1 10 \$14.00 \$15.00 \$18.25 \$21.75 1.3 12 14 60 15.70 19.15 14 15.20 16.40 20.05 22.95 3 - 516.40 20.05 24.15 16 15.80 17.10 25.35 20.95 16.40 17.80 21.85 26.55 18 These connections made in various styles.



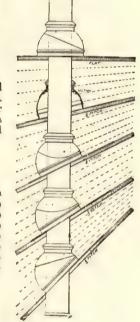
Bullard Adjustable Roof Flanges



Any one flash will adjust to all roof pitches. No solder is required.
Made of a two-piece steel or

copper ball joint, a flange and a lead collar made of galvanized sheet iron or copper.

Size	Price
Inches	per Dozen
11/4	\$30.00
11/2	30.00
2	34.00
1½ 2 3	38.00
4	40.00
4 5	57.00
6	100.00



Midland Lead Roof Flashings



Sectional View

This flashing is made entirely of lead in one piece.
The neck and base are molded at the same time.

The base is larger than usual, is heavier than 4pound sheet lead, permitting two rows of shingles to cover the upper part. The angle flashing will fit any

pitch roof.

The equipment for producing this flashing has been fully protected by United States letters patent.

Size.....in. 1 1/4 1 1/2 2 2 1/2 3 4 5 6 Price....ea. \$1.25 1.30 1.50 1.60 1.75 2.00 3.00 4.30

Penberthy Automatic Cellar Drainers



Model R

	Work	- ~		MAXIM	UM NE	T CAPA	CITIES	FROM ST	MP AT-		
	ing			10 T		OUNDS		R PRESSI	URE		T. 1
No.	Ft.	10	15	20	25	30	40	60	80	100	Price Each
1	3	80	210	300	340	400	510	700	720		\$25.00
1	6		90	140	240	300	390	570	670	690	25.00
1	9			90	150	210	330	480	620	660	25.00
1	12				100	150	220	390	550	630	25.00
1	15					90	190	300	450	600	25.00
1	18						120	250	320	550	25.00
2	3	190	390	550	620	750	910	1180	1240	1220	40.00
2	6		210	340	420	600	750	1020	1140	1200	40.00
2	9			210	300	380	540	900	1090	1150	
2	12				210	300	420	780	1020	1110	40.00
2	15					210	370	570	940	1050	40.00
2	18			9.1.1			300	510	850	970	40.00

No. 1 has ½-inch supply and 1-inch discharge; No. 2 has 3/4-inch supply and 11/4-inch discharge.

The Model R drainer requires 5-pound water pressure or more for each 1 foot of elevation while the low pressure drainer will work on 2-pound to 4-pound per foot of elevation which can be supplied.

Model L

		13tic-	Work-	ACTU	AL CAPACE	TY WILL E	LEVATER	
	Supply	tion	ing		TAKEN I	FROM SUMP	A 20 T M	
	Pipe	& Dis-	Head			PER HOUR		T) 1
No	In.		Ft.	0.0				Price
		charge		25	40	60	80	Each
3	1	$1\frac{1}{2}$	3	660	1100	1440	1650	\$55.00
3	1	$1\frac{1}{2}$	6	520	860	1230	1440	55.00
3	1	$1\frac{1}{2}$	9		720	1050	1320	55.00
3	1	$1\frac{1}{4}$	12			840	1040	55.00
3	1	11/2	18	* * *			760	55.00
4	$1\frac{1}{4}$	2	3	960	1600	2020	2400	80.00
4	11/4	2	6	760	1240	1880	1980	80.00
4	11/4	2	9		1040	1600	1800	80.00
4	$\frac{11}{4}$	2	12			1280	1440	80.00
4	11/4	2	18		1111		1050	80.00
5	$\frac{11}{2}$	$\frac{21}{2}$	3	1280	2100	2700	3200	110.00
5	11/2	$\frac{21}{2}$	6	1000	1620	2300	2820	110.00
5	$\frac{11}{2}$	$\frac{2^{1/2}}{2}$	9		1260	1960	2600	110.00
5	$\frac{11}{2}$	$\frac{21}{2}$	12			1560	2060	110.00
5	$1\frac{1}{2}$	$2\frac{1}{2}$	18				1500	110.00

The above capacities are the actual capacities of water taken from sump and not the combined discharge of operating For higher elevations than shown and drainage water. above, special drainers can be made.

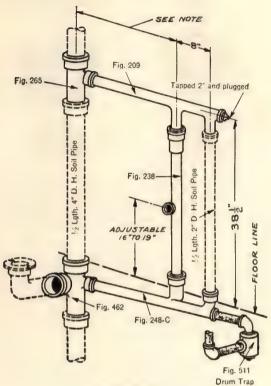
Non-automatic

Capacities, pipe connections, etc., same as other models listed above.

Price each \$15.00 25.00 35.00 50.00 70.00

No. 105 Stringer Extra Heavy Cast Iron **Bungalow Stacks**

Cast Iron Soil Stack-Cast Iron Waste Vent and Revent Fittings Bath and Basin Revented Separately



No. 105 Stack



Plan View of Fixtures

Schedule for No. 105 Stack

No.	Quan- tity	Description	Size Inches	Price Each
209	1	Top Revent	2	\$3.70
238	1	Basin Tee with 11/4 or 11/2-Inch Inlet.	2	3.20
2480	- 100	Bottom Waste with 11/2 or 2-Inch Inlet	2	3.90
265		End Revent	4x2	2.00
462	180	Closet Tee	4x2	3.70
Pric	e, No	o. 105, Complete	each	16.50

When ordering, state whether closet tees are wanted with right or left hand inlet. Illustration shows right hand.

To complete stock No. 105, add the following material: 1 half length 4-inch E.H.D.H. soil pipe;

1 drum tap and closet bend.

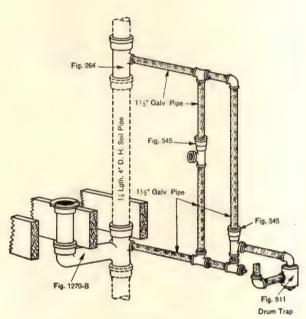
Remainder of stack made up of staple soil pipe fittings, nipples, etc., not furnished with stack.

Note. - Fig. No. 248-C Bottom Waste Fitting and Fig. No. 209 Top Revent Fittings are made long enough to give a maximum distance between center of water closet and center of lavatory of 27 inches—being scored, they may be cut off to meet any required measurement less than 27 inches.

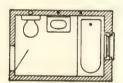
No. 108 Stringer Extra Heavy Cast Iron **Bungalow Stacks**

Cast Iron Soil Stack-Screwed Pipe Waste Vent and Revent Fittings

Closet Bend Below the Joist



No. 108 Stack



Plan View of Fixtures

Schedule for No. 108 Stack

No.	Quan- tity	Description	Size Inches	Price Each
264	1	End Revent	4x11/2	\$2 00
545	1	Hub Drainage Y with 11/4 or 11/2-		4- 00
		Inch Inlet	11/2	1 10
545	1	Hub Drainage Y	11/2	1.10
1270B	1	Santebend with Hub Inlet for 14	-/ 8	
		Inches Roughing-in	4x11/2	6.00
Price,	No.	108, Complete	.each	10.20

To complete the schedule, add the following material for No. 108 Stack:

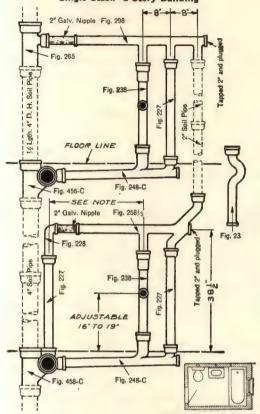
- half length 4-inch E.H.D.H. soil pipe.
- 1 No. 511, $4x4x1\frac{1}{2}$ -inch drum trap. 1 closet collar.

Remainder of stack made up of staple soil pipe, galvanized pipe and fittings not furnished with stack.

Note.—Stringer San-Te-Bends will also fit standard or medium pipe.

No. 116 Stringer Extra Heavy Cast Iron Soil Stacks

Cast Iron Soil Stack-Cast Iron Waste Vent and Revent Fittings Single Stack-2 Story Building



Plan View of Fixtures

Qua		Size	Price	Total Price
No. tity		Inches	Each	Each
228 1	Closet Vent Ell	2	\$1.30	\$1.30
238 2	Basin Tee, with 11/4 or 11/2-			
	Inch Inlet	2	3.20	6.40
248C 2	Bath Waste, 1½ or 2-Inch			
	Inlet	2	3.90	7.80
2581/2 1	First Floor Revent	2	4.70	4.70
265 1	End Revent Fitting	4x2	2.00	2.00
298 1	Top Floor Revent	2	3.70	3.70
456C 1	Closet Tee	4	4.20	4.20
458C 1	Closet Tee	4	5.20	5.20
Price, No	o. 116, Complete		.each	35.30
	231, 2-Inch Jumpover, Extra			1.75
When	ordering, state whether closet tee	s are	wante	d with

right or left hand inlet. Illustration shows right hand.
To complete the schedule, add the following material: 3 half lengths 2-inch E.H.D.H. soil pipe;

2 drum traps and closet bends;

2 galvanized nipples;

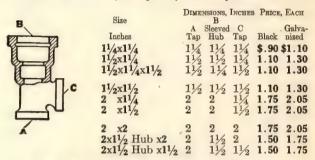
intermediate 2 and 4-inch E.H. soil pipe.

Bath and closet vents in the Fiat system are lengths of 2-inch E.H.D.H. soil pipe furnished and cut exactly in half by the plumber. No further cutting is required. Note.—No. 248C Bottom Waste Fitting is made long

enough to give a maximum distance between center of water closet and center of lavatory of 28 inches-being scored, it may be cut off to meet any required measurement less the 28 inches. After the distance between center of closet and center of lavatory is determined, 2-inch galvanized stock nipples are used in connection with top vent fittings. If a nipple 5½ inches long is used on the first floor and a nipple 1034 inches long on the second floor, the closet and lavatories rough-in 28 inches apart. If close nipples are used on the first floor and a 5-inch nipple on the second floor, the closets and lavatories rough-in 24 inches apart. The use of intermediate length nipples brings any desired measurement between 24 and 28 inches.

No. 545 Stringer Hub Drainage 90° Y-Tee Fittings

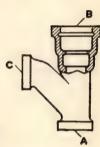
Black fittings regularly furnished tarred. Can be furnished plain untarred, if required, at same price.



No. 546 Stringer Hub Drainage Long Sweep 90° T Y Fittings

Black fittings regularly furnished ared. Can be furnished plain untarred. tarred, if required, at same price.

,	. ,			
	Drs	MENSIONS, INC.	HES	
Size	A	Sleeved	C	
Inches	Tap	Hub	Tap	
$1^{1/2} \times 1^{1/2}$	$1\frac{1}{2}$	11/2	11/2	c/11
$2 \times 11/2$	2	2	11/2	
2 x2	2	2	2	L
		PRICE, EAC	н	
Size			Galva-	
Inches	Blac	k	nized	
$1^{1/2} \times 1^{1/2}$	\$1.1	.0	\$1.30	
$2 \times 1^{1/2}$	1.7	5	2.05	
2 x2	1.7	5	2.05	



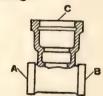
No. 550 Stringer Hub Drainage 90° Double Y-Tee Fittings

Black fittings regularly furnished tarred. Can be furnished plain untarred, if required, at same price.

		Dr	MENSIONS.	INCHI	2.5	
D		-	В			EACH
D,	Size	A	Sleeved	C	2 440 40	Galva-
					Til. ala	
	Inches	Tap	Hub	Tap	Black	nized
W W	11/2×11/4	$1\frac{1}{2}$	$1\frac{1}{2}$	11/4	\$1.50	\$1.75
	1½x1½	11/2	$1\frac{1}{2}$	11/2	1.50	1.75
_ AA						
C. The state of the control of the c	2 x11/4	2	2	11/4	2.20	2.60
		2	2	112	2.20	2.60
11 11	$2 x1\frac{1}{2}$	4	2	1/2	2.20	2.00
Lh ~"		_	_	_		
	2 x2	2	2	2	2.20	2.60
	2 x11/2	2	11/2	2	2.20	2.60
A		44	172	44	4.40	2.00
	Hub x2					
	2 x11/2	2	11/2	11/2	2.20	2.60
			172	172	2.20	2.00
	Hub x11/	2				
	, ,					

No. 570 Stringer Hub Drainage Bath Vent Tee Fittings

Black fittings regularly furnished Can be furnished plain untarred. tarred, if required, at same price.



	Dim	ENSIONS, INC	HES		
0.		-	C	Price	EACH
Size Inches	Tap	Tan	Sleeved Hub	701 1	Galva-
1½x1½x1½	11/2	11/s	$1\frac{1}{2}$	Black	nized
2 x11/2x11/2	2	11/2	11/2	\$1.30	\$1.85
720-14	9	1/2	1/2	1.30	1.85
	2	2	1/2	1.30	1.85
2 x2 x2	2	2	2	1.50	2.15
$3 x1\frac{1}{2}x3$	3	$1\frac{1}{2}$	3	3.30	4.10
3 x2 x3	3	2	. 3	3.30	4.10

No. 581 Stringer Extra Heavy Cast Iron Vented Sink Tees

With Tapped Inlet

For screwed pipe. Tapped on bottom outlet, with Stringer sleeved hub on top of run and vent.

Made with either right or left hand inlet. Illustration shows right hand inlet.

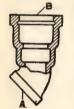
	- DIMENSIONS,	INCHES		
	В	C		
_Size A	Sleeved	Sleeved	D	Price
Inches Ta	p Hub	Hub	Tap	Trice
				Each
11/2x11/2 11/2	2 11/2	11/2	$1\frac{1}{2}$	\$2.50
2 x1½ 2	$1\frac{1}{2}$	112	112	
2 x1½x1½ 2		172	1/2	2.50
A172A172 4	2	11/2	$1\frac{1}{2}$	2.50
$2 \times 11/2 \times 2$	2	$1\frac{1}{2}$	2	2.50
	2 01/	112		
$2\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$ $2\frac{1}{2}$	21/2	1/2	$1\frac{1}{2}$	3.50
3 x1½x1½ 3	3	11/2	$1\frac{1}{2}$	4.00
	_	-/2	172	4.00



No. 5811/4 Stringer Extra Heavy Cast Iron Vented Sink Tees With End Tapped Inlet

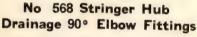
For screwed pipe. Tapped 2 inches on bottom outlet, with Stringer sleeved hub on top of run and vent.

0.	I	DIMENSI	ions, Inches	}	
Size	A B		C Sleeved	Ð	Price
Inches	Tap	Hub	Hub	Tap	Each
$2x1\frac{1}{2}x1\frac{1}{2}$	2	2	$1\frac{1}{2}$	$1\frac{1}{2}$	\$2.50

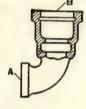


No. 567 Stringer Hub Drainage 45° Elbow Fittings

Ci	DIMENS	ions, Inches	PRICE	EACH
Size	A.	B Sleeved	W-1 .	Galva-
	Tap	Hub	Black	nized
11/4×11/4	$1\frac{1}{4}$	11/4	\$ 90	\$1.10
$1\frac{1}{2}$ X $1\frac{1}{2}$	$1\frac{1}{2}$	11/2	1 00	1.20
$2 \times 1^{1/2}$	2	11/2	1 30	1.60
2 x2	2	2 2		
- 25.00	_	-	1.30	1.60



Size	DIMENSI	ONS, INCHES B Sleeved	PRICE,	
Inches	Tap	Hub	Black	Galva- nized
$\frac{11/4}{11/2}$	$1\frac{1}{4}$	$1\frac{1}{4}$	\$.65	\$.75
	11/2	$1\frac{1}{2}$.70	. 80
2	2	2	1.05	1.20





No. 569 Stringer Hub Drainage Vent Hub **Fittings**

Black fittings regularly furnished tarred. Can be furnished plain untarred, if required, at same price.

Size A Sleaved	alva-
Inches Top Hall	ized
11/4×11/4 11/4 11/4 \$.80 \$1	.00
$\frac{11}{2}$ $\frac{11}{2}$ $\frac{11}{2}$ $\frac{11}{2}$.80 1	.00
	.20
3 73 2 2 2 1.00 1	.30
A VA 4 1.50 2	. 20
5 5 2 2.50	. 50
6 76 9 4.50	.00

No. 584 Stringer Extra Heavy Cast Iron Top Vent Fittings

For single sink stacks with screwed

pipe waste	and ven	t.				
C) .	DIMEN	SIONS, INCE	HES-			-
Size	A	_B	_C	Price		11-0
Inches	Tap	Tap	Tap	Each		
11/2x11/2	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	\$1.90	7	_
2 x1½	2	$1\frac{1}{2}$	2	1.90	A	. 8
2 x2	2	2	2	1.90		
		_	-	4.50		



No. 232 Stringer Extra Heavy Cast Iron Jumpover Fittings For Screwed Pipe

One End Screwed Hub-Other End Tapped

Sleeved Hub (Top) inche	s 11/2	2
1ap (Bottom)inche	g 11/2	9
Price, No. 232eac	\$1.75	1.75

No. 233 Stringer Extra Heavy Cast Iron Jumpover Fittings

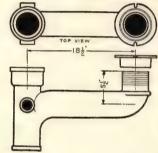
For Screwed Pipe

Both Ends Tapped Iron Pipe

Size			inches	2
Tan (Ion	and Bottom. 233	1	inches	0



No. 1216B Stringer Extra Heavy Cast Iron Closet San-Te-Bends



Stringer 4-inch long inlet closet San-Te-Bend with two 11/2-inch tapped side inlets, one on each side of tee. Regularly furnished with 2inch collar.

For closets roughing-in 14

or 14½ inches.

May be plugged for right or left hand inlet.

If wanted with 2-inch tapped side inlets order No. 1216C

Stringer San-Te-Bends will fit standard or medium pipe. ...inches

Size.. Price, No. 1216B, with Two 1½-Inch Tappings. each \$6.00 Price, No. 1216C, with Two 2-Inch Tappings. each 6.00

No. 1221B Stringer Extra Heavy Cast Iron Closet San-Te-Bends

Stringer 4-inch long inlet closet San-Te-Bend with two 1½-inch 45° tapped side inlets, one on each side of tee.

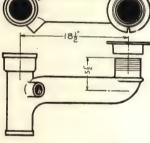
Regularly furnished with 2-inch collar.

For closets roughing-in 14 or 141/2 inches.

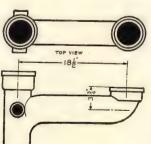
May be plugged for right or left hand inlet.

Stringer San-Te-Bend will

fit standard or medium pipe. Size.inches



Price, No. 1221B.....each \$6.00 No. 1270B Stringer Extra Heavy Cast Iron Closet San-Te-Bends



Stringer 4-inch San-Te-Bend with low hub inlet and two 11/2-inch tapped side inlets, one on each side of

For closets roughing-in 14 or $14\frac{1}{2}$ inches.

May be plugged for right or left hand inlet.

If wanted with 2-inch tapped side inlets order No. 1270C

Stringer San-Te-Bends will fit standard or medium pipe.

Sizeinches Price, No. 1270B, with Two 1½-Inch Tappings. each \$6.00 Price, No. 1270C, with Two 2-Inch Tappings. each 6.00

4

Cast Iron Drainage Fittings

Screwed for Wrought Pipe



These fittings are made with shoulder, and being the same diameter as the inside of the pipe, a continuous passage is made when the pipe is screwed up to the shoulder, thus allowing no place for solid matter to collect and clog the pipe. Recessed to allow easy access of pipe. Reg-ularly furnished asphalt-

ed but may be furnished plain or galvanized. Furnished also in malleable iron or brass at special price. May be furnished with one or more end for hub connections for cast pipe at special prices.

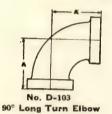
Cast Iron Drainage Fittings Screwed for Wrought Pipe Elbows with Outlet



No. D-128 Elbow with Side Outlet Dimensions, A Inches Size Inches Outlets Inches 41/8 2

No. D-129 Elbow with Heel Outlet -PRICE, EACH-Black Galv. \$3.85 \$6.75

Long Turn Elbows





No. D-104 45° Long Turn Elbow

Size	Dimensions, A Inches		PRICE,	EACH—
Inches	90°	45°	Black	Galv.
11/4	23/4	11/2	\$.35	\$.60
11/2	376	17/8	.42	.72
2	37/8	$2\frac{1}{4}$. 65	1.15
$2\frac{1}{2}$	434		1.40	2.45
3	51/4	3	1.75	3.10
4	61/8	31/2	2.75	4.80
5	714	41/8	5.25	9.20
6 7	81/4	51/2	7.50	13.15
-	81/4	61/4	13.50	23.50
8	1017	6%	19.00	33.25
10	12/4	1/2	38.00	66.50

Elbows







90° Elbow		45° Elbow		60° Elbow	
Size Inches	-90°	Inches	A	PRICE, 1 90°, 45° Black	os 60° Galv.
$\frac{11/4}{11/2}$	2 23/6	$\frac{17_{16}}{15_{8}}$	$\frac{1\frac{1}{2}}{1\frac{7}{8}}$	\$.30	\$.52 .67
1½x1¼ 2	23/6 25/8	17/8	115/6	.57	1.00
2 ¹ / ₂ 3	3 3 ³ / ₈	$\frac{2}{25}$	$\frac{2^{1/2}}{2^{11/6}}$	1.20 1.45	2.10 2.55
5	411/6 53/6	25/8 3 35/4	$\frac{278}{312}$	2.30 4.25	7.40
7 8	57/8 63/4	$\frac{31}{2}$ $\frac{33}{4}$	41/4 45%	6.25 11.50 15.00	11.00 20.00 26.25
10 90° olbowa	8 ·	41/2	51/2	31.00	54.00

90° elbows are tapped, pitched ¼ inch to the foot.

No. D-106

221/2° Elbow

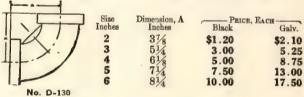
Size Inches



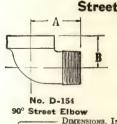


•	7		21	
	No. D	-107	No. D-	108
1	111/4° E	lbow	55/8° EII	
	DIMENSIONS, A	A	PRICE, I	EACH-
22½°	INCHES	55/80	22½°, 11¼° Black	OB 55/8° Galv.
13/6	11/8	11/8	\$.30	\$.52
$1\frac{1}{4}$	$1\frac{7}{32}$	11/4	.38	.67
176	$1\frac{13}{32}$	176	.57	1.00
13/4	$1\frac{21}{32}$	$1\frac{1}{2}$	1.20	2.10
2	$1\frac{13}{32}$	196	1.45	2.55
25/6	$2\frac{1}{8}$	17/8	2.30	4.00
$2^{5/8}$	$2\frac{3}{8}$	17/8	4.25	7.40
215/16	$2\frac{1}{2}$	$2\frac{1}{4}$	6.25	11.00
31/4	27/8	$2\frac{1}{2}$	11.50	20.00
39/6	3	$2\frac{1}{2}$	15.00	26.25
$3\frac{3}{4}$	$3\frac{1}{8}$	27/8	31.00	54.00

Long Turn Elbows with Cleanout



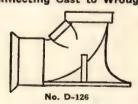
Street Elbows





		Dames	s, Inches	45	Street Fib	OW
Tize		900 DIMENSION	S, INCHES	ARO	-	_
Inches	A	70	A	30	PRICE	EACH-
	20.	D.	A	В	Black	Galv.
11/4	11/6	2%	116	1%	\$.40	\$.70
11/2	113%	215%	117	1 "	4	
- /2	-/B	-/10	1/4	+	. 40	. 70

Base Elbows with Cleanout For Connecting Cast to Wrought Pipe



Size		EACH	Size	PRICE,	EACH -
Inches	Black	Galv.	Inches	Black	Gaiv.
2	\$3.30	\$5.75	6	\$25.00	\$43.75
3	5.00	8.75	6x4	27.50	48.00
4	8.00	14.00	6 x 5	27.50	48.00
4x3	8.75	15.25	8	40.00	70.00
5	15.00	26.25	8x6	44.00	77.00
5x4	16.50	28.75	10	66.00	112.00

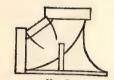
90° elbows are tapped, pitched 1/4 inch to the foot.

Size Inches

Cast Iron Drainage Fittings

Screwed for Wrought Pipe .

Base Elbows

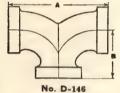


No. D-125 90° Base Elbow with Cleanout



No. D-127 45° Base Elbow

Size		90° FRICE	, EACH	,
Inches	Black	Galv.	Black	Galv.
2	\$3.00	\$5.25	\$1.00	\$1.75
3	4.50	8.00	1.75	3.10
4 .	7.00	12.25	2.75	4.80
5	12.00	21.00	4.50	7.75
6	18.00	31.50	6.75	11.75



No. D-146 Three-Way Elbow



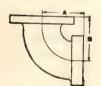
No. D-147 Reducing Three-Way Elbow

Three-way Elbows

Size Inches	DOMENSIONS, INCHES A	Black PRICE, EACH Galv.
$\frac{11/4}{11/2}$	$\begin{array}{ccc} 5\frac{1}{2} & 2\frac{3}{4} \\ 6\frac{7}{8} & 3\frac{7}{16} \end{array}$	\$.75 \$1.25 .85 1.50
21/2	734 378 918 498	1.10 1.95 2.25 3.90
3 4 5	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3.00 5.25 5.00 8.75
6	$ \begin{array}{ccc} 14\frac{1}{2} & 7\frac{1}{4} \\ 16\frac{1}{2} & 8\frac{1}{4} \end{array} $	7.50 13.15 13.50 23.50

Reducing Three-way Elbows

3x4 4x5 4x6	$9\frac{1}{2}$ $11\frac{3}{8}$ $12\frac{3}{8}$ $13\frac{3}{8}$	4 5 6 5 7 6 6 1 4	\$5.50 8.25 15.00	\$9.65 14.50 26.25
5x6	$13\frac{3}{8}$	$6\frac{1}{4}$	15.00	26.25



No. D-141 Closet Elbow, Flanged One End



No. D-142 Reducing Closet Elbow

Flanged Closet Elbows

Size Inches	DIMENSIONS,	INCHES B	Black	PRICE, EACH Galv.
4	41/8	5	\$4.25	\$7.40

Reducing Closet Elbows

Size	DIMENSION	s, Inches	PRIC	EE, EACH
Inches	A	В	Black	Galv.
4x5	47/6	313/6	\$4.25	\$7.40

Closet elbows are tapped, pitched 1/4 inch to the foot.

Cast Iron Drainage Fittings Screwed for Wrought Pipe

Tees



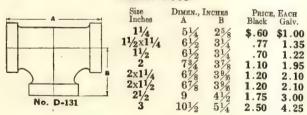
DIMENSIO	DIMENSIONS, INCHES		Black PRICE, EACH Galv.		
38/	174				
412	91/8	\$.45	\$.80		
572 512	474	.55	1.00		
0/4	25/8	.80	1.40		
6	3	1.50	2.50		
$6\frac{7}{8}$	31/16	2.00	3.50		
81/4	$4\frac{1}{8}$	3.25	5.70		
$9\frac{3}{8}$	411/6	6.00	10.50		
$10\frac{3}{4}$	53/8	8.75	15.25		
113/4	5 1/8	16.00	28.00		
133/4	67%	21.00	37.00		
16	8	43.00			
20	0	43.00	75.00		

Reducing Tees



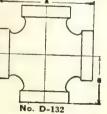
	Sise	DIMENSIONS,		PRICE,	EACH—
	Inches	A	В	Black	Galv.
2	x11/4	41/6	21/2	\$.90	\$1.60
2	x11/2	411/16	2%	. 90	1.60
2	/2×11/2	51/4	25/8	1.65	2.75
2	/2×2	53/8	21/6	1.65	2.75
3	$x1\frac{1}{2}$	5 1/18	$3\frac{1}{4}$	2.20	3.85
3	x2	$5\frac{1}{2}$	35%	2.20	3.85
4	x2	53/4	37/8	3.60	6.30
4	x3	71/6	4	3.60	6.30
5	x2	$5\frac{7}{8}$	43/8	6.60	11.55
5	x3	7 3/16	41/2	6.60	11.55
5	x4	85/6	45/8	6.60	11.55
6	x2	6	5	9.60	16.75
6	x3	7 5/6	51/8	9.60	16.75
6	x4	87/6	51/4	9.60	16.75
6	x 5	$9\frac{1}{2}$	55%	9.60	16.75
7	x4	83/4	61%	17.60	30.80
8	x 4	87/8	$6\frac{1}{2}$	23.00	40.70
8	x6	111/4	$63\frac{7}{4}$	23.00	40.70
10	x6	115%	77/8	47.30	82.50
		, 0	/ 0	100	02.00

Basin Tees



Basin Crosses

Size Inches 11/4 11/2 2	DIMEN. A 51/4 61/2 73/4	25/8 31/4 37/8	PRICE, Black \$1.25 1.50 1.75	EACH Galv. \$2.25 2.50 3.10	
2 2x1½	$\frac{734}{678}$	$\frac{37}{8}$	1.75 1.95	3.10 3.40	[



Cast Iron Drainage Fittings Screwed for Wrought Pipe





No. D-117 90° Y Branch

No. D-118 Reducing 90° Y Branch

Tee Pattern 90° Y Branches

Sise Inches	A Dn	tensions, Inchi B	58 — C	PRICE, I	EACH CLI
41101100	A	ь			Galv.
1	31/4	2	2	\$.40	\$.70
11/4	33/4	$2\frac{1}{4}$	21/4	.45	. 80
$1\frac{1}{2}$	41/4	21/2	21/2	.57	1.00
2	53/6	31/6	31/4	. 85	1.50
$\frac{2^{1}/2}{3}$	67/8	4	4	1.80	3.15
3	$7\frac{7}{8}$	$5\frac{1}{4}$	$5\frac{1}{4}$	2.20	3.85
4	93/8	61/8	61/8	3.50	6.15
5	111/4	71/4	71/4	6.50	11.35
6	$12\frac{7}{8}$	81/4	81/4	9.50	16.50
7	133/4	81/4	81/4	17.50	30.50
8	$15\frac{1}{2}$	91/4	91/4	23.00	40.00
10	191/4	$12\frac{1}{4}$	$12\frac{1}{4}$	47.00	82.00

Reducing Tee Pattern 90° Y Branches

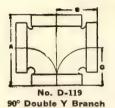
Size	Dnu	ensions, Inci	1108	PRICE,	EACH-
Inches.	A	В	C .	Black	Galv.
1½x1	33/4	$2\frac{1}{4}$	21/4	\$.50	\$.90
1½x1	43/8	23/4	23/4	.63	1.10
11/2×11/4	43/8	23/4	23/4	.63	1.10
2 x11/4	55/8	384	337	.95	1.65
$2 \times 11/2$	55/8	33/4	37%	.95	1.65
2½x1¼	61/4	33/4	4	2.00	3.50
$2^{1/2} \times 1^{1/2}$	$6^{1/3}$	4	41/4	2.00	3.50
$2\frac{1}{2}$ x2	611	41/4	41/2	2.00	3.50
3 x11/4	611/6	41/4	41/	2.40	4.20
3 x11/2	65%	48%	47%	2.40	4.20
3 x2	77%	41/2	5	2.40	4.20
3 x2 4 x1 ¹ / ₄	75%	514	51/4	3.85	6.75
4 x1½	71/2	5	51/4	3.85	6.75
4 x2	711/2	51/8	532	3.85	6.75
4 x21/2	8 19	514	55%	3.85	6.75
4 x3	8%	514	53%	3.85	6.75
5 x1½	73/4	51/2	512	7.15	12.50
5 x1½ 5 x2 5 x2½ 5 x3 5 x4 6 x1½	715%	511/16	$\frac{5}{2}$	7.15	12.50
5 x21/2	814	6	61/4	7.15	
5 x3	- 7.75	57/8	6		12.50
5 x4	105 kg	$\frac{61}{8}$	63/4	7.15	12.50
6 x1½	87/6		674	7.15	12.50
6 x2	0 7 10	00%	67/8	10.50	18.50
6 x3	87 ₁₆ 911 ₆	63/8	534	10.50	18.50
6 x4	$10\frac{1}{2}$	63/	$6\frac{1}{4}$	10.50	18.50
6 x5	$10\frac{7}{4}$	0 %	$6\frac{3}{4}$	10.50	18.50
7 x4		16	8	10.50	18.50
8 x2	101/4	73/8	$6\frac{1}{4}$	19.00	33.25
0 X4	10	736	73/6	25.50	44.50
8 x3	10	71/4	$6\frac{1}{2}$	25.50	44.50
8 x4	111/2	$7\frac{1}{2}$	71/2	25.50	44.50
8 x5	$15\frac{1}{2}$	95/16	95/16	25.50	44.50
8 x6	$15\frac{1}{2}$	95/16	95/16	25.50	44.50
10 x3	$10\frac{1}{2}$	81/2	$6\frac{1}{2}$	52.00	88.00
10 x4	1078	83/4	63/4	52.00	88.00
10 x6	$13\frac{3}{8}$	93/4	81/4	52.00	88.00

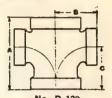
Y branches are tapped, pitched 1/4 inch to the foot.

Inlets on reducing fittings are always the smallest opening.

These fittings have an interior shoulder, and are made with the same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipe.

Cast Iron Drainage Fittings Screwed for Wrought Pipe





No. D-120 Reducing 90° Double Y Branch

Tee Pattern 90° Double Y Branches

Size	DIMENSIONS, INCHES			PRICE	EACH
Inches	A	В	C	Black	Galv.
1	$3\frac{1}{4}$.	2	2	\$.60	\$1.05
11/4	41/4	$2\frac{1}{2}$	$2\frac{1}{2}$.70	1.22
11/2	53/6	376	376	.85	1.50
2	61/16	37/8	37/8	1.30	2.30
$2\frac{1}{2}$	71/8	411/18	411/6	2.85	5.00
3	77/8	51/4	$5\frac{1}{4}$	3.40	5.95
4	93/8	61/8	61/8	5.25	9.20
5	$11\frac{1}{4}$	71/4	71/4	9.50	16.50
6	$12\frac{7}{8}$	81/4	81/4	14.00	24.50
8	$15\frac{1}{2}$	$9\frac{1}{4}$	91/4	36.00	62.00
10	$19\frac{1}{4}$	$12\frac{1}{4}$	$12\frac{1}{4}$	60.00	102.00

Reducing Tee Pattern 90° Double Y Branches

	Size	D	IMENSIONS, IN	CHES-	PRICE, I	EACH-
I	nches	A	В	C	Black	Galv.
11	4x1	41/8	21/2	$2\frac{1}{2}$	\$.77	\$1.35
11	2x11/4	$5\frac{1}{4}$	33/2	$3\frac{3}{8}$.95	1.65
2	x11/4	55/8	33/4	33/4	1.50	2.60
2	$x1\frac{1}{2}$	656	33/4	37/8	1.50	2.60
	2x11/2	71%	4116	411/6	3.15	5.50
	2x2	71%	411/10	411/0	3.15	5.50
3	x11/2	65%	43/9	47/8	3.75	6.55
3	x2 /2	7 7%	41%	5	3.75	6.55
4	x2	75%	51%	55/8	5.75	10.00
4	x3	89%	51/4	584	5.75	10.00
	x2	715	511/4	$5\frac{1}{2}$	10.50	18.50
5	x3	0.3%	5 7/2	6	10.50	18.50
5	x4	105%	61/8	63/4	10.50	18.50
6	x2	87/4	63%	$5\frac{3}{4}$	15.50	27.00
6		011/	-/0			
	x3	101/	69/6	$\frac{61}{4}$	15.50	27.00
6	x4	101/2	$6\frac{3}{4}$	$6\frac{3}{4}$	15.50	27.00
6	x5	$\frac{12\frac{1}{4}}{10^{14}}$	7/16	8	15.50	27.00
8	х3	10	1/4	$6\frac{1}{2}$	40.00	68.00
8	x4	11/2	7/2	71/2	40.00	68.00
8	x6	$15\frac{1}{2}$	9%	95/16	40.00	68.00
10	x4	107/8	83/4	634	66.00	112.00
10	x6	$13\frac{3}{8}$	$9\frac{3}{4}$	81/4	66.00	112.00



Long Turn Closet Tees

Tee Pattern 90° Y
Branches with
Auxiliary
Inlets on Body

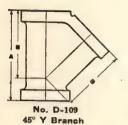


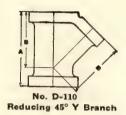
Inlet on Sides Inlet on Sides and Top
2 -inch Inlet on Right or Left Side

	2 -inch	inlet on	right or	Lett Side	
Size Inches	Price, l Black	Each Galv.	Size Inches	PRICE, I Black	EACH Galv.
3	\$5.25	\$9.20	5x4	\$12.00	\$21.00
4	9.00	15.75	6x4	23.00	40.00
	2-	inch Inlet	on Both	Sides	
3	\$5.75	\$10.00	5x4	\$13.00	\$22.75
4	10.00	17.50	6x4	25.00	44.00
	2-inch l	nlet on R	. or L. Si	de and Top	
3	\$5.75	\$10.00	5x4	\$13.00	\$22.75
4	10.00	17.50	6x4	25.00	44.00
	2-inch	inlet on	Both Side	s and Top	
3	\$6.50	\$11.00	5x4	\$14.50	\$25.50
4	11.00	19.25	6x4	28.00	49.00

Cast Iron Drainage Fittings

Screwed for Wrought Pipe





45° Y Branches

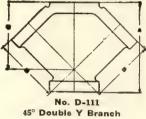
Size Inches	DEMENSIONS,		PRICE,	EACH -
	A.	В	Black	Galv.
11/4	$\frac{41}{2}$	33/6	\$.52	\$.90
11/2	$6\frac{1}{4}$	41/8	.65	1.15
2	73/8	415/16	.95	1.65
21/2	81/2	$5\frac{3}{4}$	2.10	3.70
3	9%	65/8	2.65	4.65
4	113/8	$8\frac{1}{8}$	3.85	6.75
5	133/6	976	7.10	12.50
6	149/6	10%	10.50	18.50
7	155/8	$11\frac{1}{2}$	19.00	33.25
8	173/4	$13\frac{3}{16}$	25.00	44.00
10	$20\frac{3}{4}$	$15\frac{3}{4}$	52.00	91.00

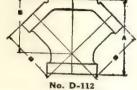
Reducing 45° Y Branches

	Size -	Dragon	ons, Inches	Daves	17
	Inches	A	В	Black	EACH—Galv.
1	½x1½	6	4	\$.72	\$1.25
2	x11/4	63/8	41/2	1.05	1.85
2	x1½	69/16	496	1.05	1.85
2	1/2×11/4	576	41/4	2.30	4.00
21	$\frac{1}{2} \times 1^{1/2}$	69 % 57 % 534	41/4	2.30	4.00
21	/2x2	$6\frac{1}{4}$	41/2	0.00	
3	x11/4	7	53/8	2.30	4.00
3	x1½	73/6	$5\frac{1}{2}$	2.90	5.10
3	x2	8	57/8	2.90	5.10
3	x21/2	83/8	61/8	2.90 2.90	5.10
				4.50	5.10
4	x11/4	81/4	65/8	4.25	7.40
4	x11/2	8	61/6	4.25	7.40
4	x2	81/4	65%	4.25	7.40
4	x21/2	97/8	71/2	4.25	7.40
4	x3	915/16	776	4.25	7.40
5	x2	81/2	73/8	7 00	40.00
5	x3	101/6	83/16	7.80	13.65
5	x4	111/16	87/8	7.80 7.80	13.65
6	x2	83/4	814	11.50	13.65
6	x21/2	83/4	81/4	11.50	20.00
			-	XI.30	20.00
6	x3	103/8	91/6	11.50	20.00
6	x4	111/16	934	11.50	20.00
6	x5	131/2	103/8	11.50	20.00
7	х3	111/4	10	21.00	37.00
7	x4	115/8	101/6	21.00	37.00
7	x5	117/8	101/2	21.00	27 00
7	x6	$12\frac{1}{2}$	1134	21.00	37.00
8	x3	11 2	1014	27.50	37.00
8	x4	12	1016	27.50	48.00 48.00
8	x5	131/2	113%	27.50	48.00
	*				40.00
8	x6	$14\frac{1}{2}$	117/8	27.50	48.00
10	×4	13	$12\frac{3}{8}$	57.00	37.00
10	x5	151/4	1376	57.00	97.00
10	x6	151/4	137/6	57.00	97.00
10	x8	181/8	143/8	57.00	97,00

Cast Iron Drainage Fittings

Screwed for Wrought Pipe





No. D-112 Reducing 45° Double Y Branch

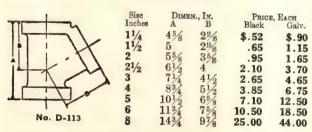
45° Double Y Branches

Size Inches	DIMENSIONS	, INCHES	PRICE	E, EACH-
Tucnes	A.	В	Black	Galv.
11/4	$4\frac{1}{2}$	33/6	\$.90	\$1.60
11/2	$6\frac{1}{4}$	$4\frac{1}{8}$	1.00	1.75
2	73/8	415/6	1.45	2.55
21/2	$8\frac{1}{2}$	$5\frac{3}{4}$	3.25	5.70
3	99%	65/8	4.00	7.00
4	$11\frac{3}{8}$	81/8	5.75	10.00
5	133/8	97/6	10.75	18.80
6	14%	10%	16.00	28.00
7	155/8	$11\frac{1}{2}$	28.50	50.00
8	173/4	$13\frac{3}{16}$	38.00	66.50
10	2034	$15\frac{3}{4}$	78.00	137.00

Reducing 45° Double Y Branches

Size	Drugge	ons, Inches	Descri	. 10
Inches	A	B	Black	Galv.
11/2×11/4	6	4	\$1.10	\$1.90
2 x11/4	63/8	41/6	1.60	2.80
2 x1½	69%	49/4	1.60	2.80
21/2×11/4	576	41/4	3.60	6.30
21/2×11/2	534	41/4	3.60	6.30
21/2×2	61/4	41%	3.60	6.30
3 x1½	73/16	51%	4.40	7.70
3 x2	8	57%	4.40	7.70
3 x2 4 x2	81/4	65%	6.35	
4 x3	915/16	77%	6.35	11.00
	81/2	73%	11.75	11.00
5 x2 5 x3	1016	83%	11.75	20.50
5 x4	11116	874		20.50
6 x2	83/4	91/	11.75	20.50
6 x3	103/8	012	17.50	30.50
6 x4	11156	93/	17.50	30.50
6 x5	131/2	- / 18	17.50	30.50
7 x3	$11\frac{5}{8}$		17.50	30.50
	115/8	1016	31.50	54.00
	$11\frac{5}{8}$	101/8	31.50	54.00
	$\frac{127}{143}$	107/6	31.50	54.00
7 x6	143/4	$\frac{11^{3}4}{100^{14}}$	31.50	54.00
8 x3 8 x4	11	$10\frac{1}{4}$	42.00	72.00
8 x4	12	1011/16	42.00	72.00
8 x5	131/2	1136	42.00	72.00
8 x6	141/2	117/8	42.00	72.00
10 x4	13	$12\overset{3}{\scriptstyle{8}}$	86.00	146.00
10 x6	151/4	137%	86.00	146.00
10 x8	181/8	$14\frac{3}{8}$	86.00	146.00

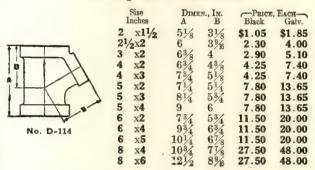
60° Y Branches

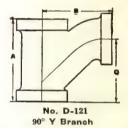


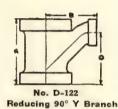
90° Y branches are tapped pitched 1/4 inch to the foot.

Cast Iron Drainage Fittings Screwed for Wrought Pipe

Reducing 60° Y Branches







Tee Pattern 90° Long Turn Y Branches

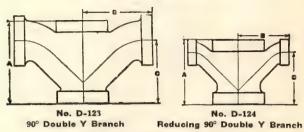
Size	I	DIMENSIONS, INC	CHES	PRICE	EACH
Inches	A	В	C	Black	Galv
11/4	43/4	$3\frac{1}{2}$	31/2	\$.57	\$1.00
11/2	51/4	33/4	33/4	.70	1.22
2	65/8	$5\frac{1}{8}$	55/8	1.10	1.95
$2^{1/2}$	734	6	6	2.40	4.20
3	8	67/8	65/8	3.35	5.85
4	101/8	85/8	81/4	6.00	10.50
5	111/4	91/8	83/4	9.50	16.50
6	133/8	103/8	101/8	20.00	35.00
7	141/2	1014	101/4	30.00	52.50
8	17	12	12	40.00	70.00

Reducing Tee Pattern 90° Long Turn

		Y Bran	nches		
Size Inches	A D	mensions, Inc	C	Black	Galv.
11/4×1	$4\frac{1}{2}$	311/16			
1½x1		35/8	3 ¹¹ / ₈ 3 ⁵ / ₈	\$.63	\$1.10
172XI	4 ⁵ / ₈ 4 ³ / ₄	95/	25/8	.80	1.40
1 /2 X 1 /4	$\frac{4\frac{9}{4}}{5\frac{3}{8}}$	35/8	35/8	.80	1.40
1½x1¼ 2 x1¼ 2 x1½	9%8	47/16	4/16	1.20	2.10
Z X1½	2/2	41/2	41/2	1.20	2.10
$2\frac{1}{2} \times 1$	4	$5\frac{3}{4}$	$5\frac{3}{4}$	2.65	4.65
21/2×11/4	714	53/6	53/16	2.65	4.65
$2\frac{1}{2} \times 1\frac{1}{2}$	71/2	$5\frac{1}{2}$	$5\frac{1}{2}$	2.65	4.65
$2\frac{1}{2}$ $\times 1\frac{1}{2}$ $2\frac{1}{2}$ $\times 2$	$7\frac{3}{8}$	53/4	$5\frac{3}{4}$	2.65	4.65
$3 \times 1\frac{1}{2}$	6	$5\frac{1}{4}$	43/4	3.75	6.55
3 x2	71/4	5	$5\frac{1}{2}$	3.75	6.55
3 x21/2	77/8	63/4	$63\sqrt{4}$	3.75	6.55
4 x1½	61/6	576	43/4	6.60	11.55
4 x2	71/4	$6\frac{1}{2}$	$5^{1/2}$	6.60	11.55
4 x21/2	85/8	716	65%	6.60	11.55
4 x3	81/2	71/2	61/2	6.60	11.55
5 x1½	65/8	6	415/4	10.50	.18.50
5 x1½ 5 x2 5 x2½ 5 x3 5 x4 6 x2	73/	71/8	61/8	10.50	18.50
5 x21/2	83/8	73/8	73%	10.50	18.50
5 x3	83/8	73/8 73/8	$6\frac{1}{2}$	10.50	
5 x4	934	83/4	71/2	10.50	18.50 18.50
6 x2	715/16	73/	65%	22.00	
6 x3	934	- /4	91/		38.50
6 x4	103/	$\frac{91/8}{91/2}$	0716	22.00	38.50
	$10\frac{3}{4}$ $11\frac{3}{4}$	9/2	81/8	22.00	38.50
6 x5	1104	95/8	83/4	22.00	38.50
7 x3	10^{12}	$10\frac{1}{2}$	81/4	33.00	58.00
7 x4	1314	1134	$10\frac{1}{4}$	33.00	58.00
7 x5	13	934	9	33.00	58.00
7 x6	$13\frac{3}{4}$ $10\frac{5}{8}$	$10\frac{1}{2}$	$10\frac{1}{2}$	33.00	58.00
8 x3	105/8	107/8	85/16	44.00	77.00
8 x4	$13\frac{3}{8}$	12	10 1/16	44.00	77.00

Cast Iron Drainage Fittings

Screwed for Wrought Pipe



Tee Pattern 90° Long Turn Double Y Branches

Size]	DIMENSIONS, IN	CHES	PRICE	, EACH
Inches	A	В	C	Black	Galv.
11/4	41/4	$2\frac{1}{2}$	21/2	\$1.00	\$1.75
11/2	51/4	33/4	33/4	1.10	1.95
2	65/8	$5\frac{1}{8}$	55/8	1.75	3.10
$\frac{2^{1}/_{2}}{3}$	73/4	6	6	3.60	6.30
3	8	67/8	65/8	5.00	8.75
4	$10\frac{1}{8}$	85/8	81/4	9.00	15.75
5	$11\frac{1}{4}$	91/8	83/4	14.00	24.50
6	$13\frac{3}{8}$	103/8	101/8	30.00	52.50
7	141/2	101/4	101/4	45.00	79.00
8	17	12	12	60.00	105.00

Reducing Tee Pattern 90° Long Turn Double Y Branches

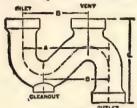
en:		- 5			-	**
Si		Di	MENSIONS, INC.	HES C	PRIC	E, EACH
fne		A	В	-	Black	Galv.
11/	4x1	$4\frac{1}{2}$	311/6	311/16	\$1.10	\$1.90
11/	2x1	45/8	35/8	$3^{5}/_{8}$	1.25	2.25
11	2x11/4	45%	35/8	35/8	1.25	2.25
2	x11/4	53%	4 7/6	476	1.90	3.35
2	x11/2	51%	41/2	41/2	1.90	3.35
21/	2×11/4	71/	53/6	53/6	4.00	7.00
-4	2x11/2	717	53%	53%	4.00	7.00
-	2x2	73%	53/4	534	4.00	7.00
3	x11/2	6	514	434	5.50	9.65
3	x2	71/	5	512	5.50	9.65
4	x1½	61%	57/6	43/4	10.00	17.50
	-972	716		-/·*		
4	x2	124	61/2	$5\frac{1}{2}$	10.00	17.50
4	$x2\frac{1}{2}$	85/8	7 1/16	$6\frac{5}{8}$	10.00	17.50
4	x3	81/2	$7\frac{1}{2}$	$6\frac{1}{2}$	10.00	17.50
5	$x1\frac{1}{2}$	65/6	6	415/6	15.50	27.00
5	x2	73/4	$7\frac{1}{8}$	$6\frac{1}{8}$	15.50	27.00
5	x3	83/8	$7\frac{3}{8}$	$6\frac{1}{2}$	15.50	27.00
5	x4	93/4	83/4	$7\frac{1}{2}$	15.50	27.00
6	x2	715/16	73/4	656	33.00	58.00
6	x3	93/4	91/8	81/6	33.00	58.00
6	x4	$10\frac{3}{4}$	91/2	81/8	33.00	58.00
6	x5	$11\frac{3}{4}$	95/8	83/4	33.00	58.00
7	x4	141/2	101/4	101/4	50.00	85.00
8	x3	$10^{5/8}$	107/8	856	66.00	112.00
8	x4	133/8	12	107/6	66.00	112.00

Increasers



	Size In.	Dim., I	A Price Black	e, Each Gaiv.	Size In.	Dim., A	Parca Black	, Each Galv.
11/	2x11/4	9	\$1.50	\$2.60	5x4	9	\$5.50	\$9.65
2	$x1^{1/2}$	9	1.75	3.00	6x3	9	6.50	11.35
21/	2×2	9	2.00	3.50	6x4	9	6.50	11.35
3	x2	. 9	2.50	4.40	6x5	9	6.50	11.35
4	x2	9	3.75	6.55	7x5	9	12.00	20.00
4	x3	9	3.75	6.55	7x6	9	12.00	20.00
5	x2	9	5.50	9.65	8x6	9	15.00	26.25
5	x3	9	5.50	9.65	8x7	9	15.00	26.25

Cast Iron Drainage Fittings Screwed for Wrought Pipe S Traps with Vent

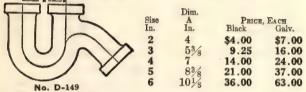


No.	D-148	CUTLET
	Size	Size

Size	DIM	ensions, In	CHES	Vent	Cleanout	Price	E. EACH
In.	A	В	C	Inches	Inches	Black	Galv.
2	8	6	83/4	2	1	\$4.00	\$7.00
3	11	81/4	111/4	3	11/4	9.25	16.00
4	$13\frac{1}{2}$	$10\frac{1}{2}$	137/8	4	2	14.00	24.00
5	$15\frac{1}{2}$	115/8	153/4	4	2	21.00	37.00
6	$17\frac{1}{2}$	13	18	4	2	36.00	63.00
8	$23\frac{7}{8}$	18	233/4	6	3	60.00	105.00

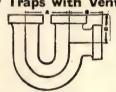
The vent for the 2-inch size is 2 inches; 3-inch size, 3 inches; 4, 5 and 6-inch sizes, 4 inches.

Three-quarter S Traps with Vent



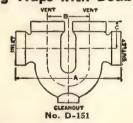
The vent for the 2-inch size is 2 inches; 3-inch size, 3 inches; 4, 5 and 6-inch sizes, 4 inches.

P Traps with Vent



Size		-DIMENSION	B, INCHES-		PRICE.	EACH
In.	A	В	C	Vent	Black	Galv.
11/4	37/6	25/8	$2\frac{1}{2}$	11/2	\$1.55	\$2.70
$1\frac{1}{2}$	31/16	25/8	$2\frac{1}{2}$	$1\frac{1}{2}$	1.70	3.00
2	4	31/6	296	2	2.20	3.85
3	$5\frac{3}{8}$	43/6	31/2	3 /	5.00	8.75
4	7	$5\frac{1}{8}$	43/16	4	10.00	17.50
5	83/8	61/6	43/4	4	21.50	37.50
6	101/8	69/6	576	4	32.50	57.00
8	123/8	815/6	63/4	4	55.00	95.00
10	18	811/16	93/8	4	100.00	175.00

Running Traps with Double Vent



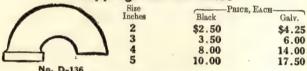
Size		-DIMENSION	Price	EACH		
Inches	A	В	C	Vent	Black	Galv.
11/4	83/4	37/8	$2\frac{1}{2}$	11/2	\$2.40	\$4.20
11/2	83/4	$3\frac{7}{16}$	$2\frac{1}{2}$	$1\frac{1}{2}$	2.70	4.70
2	101/8	4	296	2	3.30	5.75
3	133/4	53/8	31/2	3	5.50	9.50
4	$17\frac{1}{4}$	7	43/6	4	9.75	17.00
5	$20\frac{1}{2}$	83/8	43/4	4	24.50	43.00
6	$23\frac{1}{4}$	101/8	$5\frac{7}{16}$	4	33.50	58.50
8.	301/4	123/8	63/4	4	65.00	115.00
10	353/8	18	93/8	4	115.00	200.00

Cast Iron Drainage Fittings Screwed for Wrought Pipe Offsets



Cino	06	t Length	Descri	****		est	000	T (3	-	
CIRC	OHBE	t Length		EACH		Stre	Offset	Length	PRICE	, EACH
ın.	В, П	ı. A, În.	Black	Galv.		in.	B, In.	A., In.	Black	Galv.
2	4	71/2	\$2.15	\$3.75		4	10	$15\frac{3}{4}$	\$7.50	\$13.15
2	6	$9\frac{1}{2}$	2.40	4.20	4	4	12	173/4	8.50	15.00
2	8	$11\frac{1}{2}$	2.60	4.55		5	6	$12^{5/8}$	9.00	15.75
	10	$13\frac{1}{2}$	2.85	5.00		5	8	$14\frac{5}{8}$	10.00	17.50
3	4	83/4	3.35	5.85		5	10	165/8	11.00	19.25
3	6	$10\frac{3}{4}$	4.00	7.00		5	12	185/8	12.00	21.00
3	8	$12\frac{3}{4}$	4.75	8.30		6	6	135/8	12.50	22.00
3	10	$14\frac{3}{4}$	5.50	9.65		6	8	155/8	13.50	23.50
4	4	93/4	5.00	8.75		6	10	175/8	14.50	25.50
4	6	$11\frac{3}{4}$	5.75	10.00		6	12	$19^{5/8}$	15.50	27.00
4	8	133/4	6.50	11.35				, ,		

Cappings for Air Inlet



Hub Connections

ize	Dm	ensions, In	CHES	PRICE.	EACH	1
In.	A	В	C	Black	Galv.	P-C-
2	$3\frac{1}{2}$	313/6	3	\$1.15	\$2.00	
3	49/6	415/16	41/8	1.20	2.10	
4	$5\frac{5}{8}$	6	51/8	1.50	2.60	
5	611/6	71/6	6	2.00	3.50	A-
6	73/4	83/16	71/8	4.25	7.40	No. D-140
-		1				

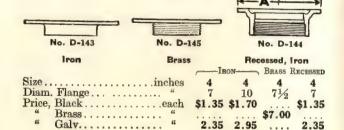
Tucker Connections Size Inches PRICE, EACH Black Galv. Size Inches PRICE, EACH Black Galv. \$.80 2.00 2 \$1.40 \$6.00 \$10.50 3 3.50 8.75 15.25 3.25 5.70

Brass Solder Nipples

	Diass Solder	Hippica		
Size In.	Price Each	Size Inches	Price Each	
1	\$.80	3	\$2.75	
11/4	.90	4	4.00	
11/2	1.05 1.50	5	9.00	
2	1.50	•		No. D-139

		Tra	p Scre	w Ferr	ules	
No. D-138	Size Inches 2 3 4	PRICE, Black \$1.00 2.00 3.00	EACH Galv. \$1.75 3.50 5.25	Size Inches 5 6	PRICE Black \$5.00 7.00	EACH Galv. \$8.75 12.25

Closet Flanges



Duriron Acid-proof Drain Pipe and Fittings



Duriron is a cast metal alloy containing the proper silicon content to make it entirely resistant to all acids and alkalies used commercially, of any strength or temperature.

It is extremely hard and is not affected by the scouring effect of solids carried in suspension.

Duriron pipe is equally resistant inside, outside and all through its structure; there is no coating, lining or treating, and therefore no scaling or chipping to expose it to attack.

With a Duriron drain line installation it is unnecessary to encase it in concrete, to provide drip pans, or to make any provision for anticipated failure.

Duriron lines may be laid in concrete. In cinder concrete, where the sulphur will at once attack iron pipe, there is no action on Duriron.

Duriron drain lines are installed in the same manner as cast iron, except that asbestos rope should be used instead of oakum. Joints in a Duriron line, properly caulked, will not loosen or leak even under severe conditions such as building vibration or settling.

Duriron pipe, while taking paint readily when it is desired, does not require it for preservation, because it does not rust. It may show a discoloration due to surface impurities, sand, etc., of the casting, but there is no further action.

Duriron pipe will handle acids and acidulated water with the same facility and with no more effect on it than pure water has on cast or wrought iron pipe. It eliminates waste of material and reduces accident and fire hazard.

Duriron Acid-proof Pipe

			Single-h	ub Pi	pe		
Size In.	No. Ft. per Lgth.	Weight per Lgth. Pounds	Price per Lgth.	Size In.	No. Ft. per Lgth.	Weight per Lgth. Pounds	Price per Lgth.
$1\frac{1}{2}$	3	18	\$11.00	4	5	79	\$37.80
2	4	32	16.40	6	5	135	65.00
3	5	59	27.80	8	5	230	116.00
			Double-I	nub Pi	pe		
11/2	3	21	\$12.00	4	5	81	\$43.00
2	4	34	18.90	6	5	142	71.00
3	4	50	28.00	8	5	253	124.00

Sanitary Tee, Y and TY Branches

		TEE BRANCHES		Y Br.	ANCHES	TY BRANCEES		
	Size	Weight	Price	Weight	Price	Weight	Price	
			Each	Pounds	Each	Pounds		
	In.	Pounds	ESPOR		TOROUT		Each	
11	$\frac{1}{2}$ x 1 $\frac{1}{2}$	9	\$4.90	9	\$5.10	9	\$5.35	
2	$x1\frac{1}{2}$	10	5.45	10	5.90	11	6.00	
2	x2	11	6.10	11	6.20	12	7.00	
3	$x_{1/2}$	13	7.00	13	7.70	14	7.90	
3	x2	14	7.60	14	7.80	15	8.20	
3	x3	17	8.60	17	8.90	19	10.30	
4	$x1\frac{1}{2}$	16	8.70	17	8.80	18	10.00	
4	x2	18	9.15	18	10.00	19	11.50	
4	x3	21	11.80	21	12.80	22	14.50	
4	x4	22	13.60	25	14.70	28	15.30	
6	x 2	35	16.80	35	17.80	26	18.40	
6	x3	39	19.00	39	20.00	34	21.40	
6	x4	44	19.50	44	21.50	36	23.20	
6	x6	52	24.00	52	27.00	47	29.50	

Duriron Acid-proof Drain Pipe Fittings Upright Y Branches



I	Size nches	Weight Pounds	Price Each	Size Inches	Weight Pounds	Price Each
11/	$2 \times 1^{1/2}$	9	\$5.40	4 x2	19	\$11.50
	$x1\frac{1}{2}$	11	6.00	4 x3	22	14.50
2	x2 /2	12	7.00	4 x4	28	15.30
3	x1½	14	7.90	6 x2	36	18.40
3	x2	15	8.20	6 x3	41	21.50
3 3	x3	19	10.30		46	
4	x1½	18	10.30			23.20
*	A1 72	TO			56	29.50
			Red	ucers		
2	$x_{1}^{1/2}$	5	\$3.20	5 x4	12	\$6.30
3	$x1\frac{1}{2}$	6	3.60	6 x2	$\overline{12}$	6.30
3	x2	7.	4.50	6 x3	13	6.70
4	$x_{1/2}$	7	4.50	6 x4	14	7.80
4	x2		4.80	6 x5	18	11.00
4	x3	8	5.20	8 x4	27	20.00
	AU	U			41	20.00
				easers		
11/	2×2	7	\$4.00	3 x6	16	\$11.00
11/	2x3	81/2	4.40	4 x5	16	11.00
2	x3	9	5.00	4 x6	171/2	12.70
11/	2×4	$10\frac{1}{2}$	5.20	5 x6	18	13.50
2	x4	11	6.30	4 x8	43	30.00
3	x4	13	6.90	6 x8	50	34.00
2	x6	15	7.80	• 210	••	01100
			Quarte	Bends	••	
41	,					
11/	2	6	\$4.00	4	16	\$8.20
2		7	4.80	6	30	16.70
3		12	6.20	8	67	50.00
		Eight	h and Si	xteenth	Bends	
11/	4	5	\$3.90	4	13	\$7.80
2		7	4.50	6	25	16.20
3		9	5.90	8	50	38.00
		, 0	3.30	0	- 00	30.00
in the			- C.		100	100
100		400	000000			2025 CO. 100 S. 14



P Trap

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S Traps								
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Standard Sewer Pipe and Fittings Sewer Pine

	Size	Price	Size	Price	Size	Price
Augustinia and a second and a s	In.	per Ft.	In.	per Ft.	In.	per Ft.
	3-4	\$.40	- 15	\$1.80	24	\$4.50
	5-6	. 55	18	2.50	27	6.50
	8	.90	20	3.00	30	7.20
	10	1.05	21	3.50	33	9.00
011	12	1.35	22	4.00	36	10.25

Channel pipe, price of % of one foot of pipe. Elbows

10

12

5-6 8	2.20 3.60	12		\$1.20 5.40		
		Cui				
	Size In.	Price per Ft.	Size In.	Price per Ft.	Size In.	Price
	3-4	\$1.60	15	\$7.20	24	per Ft. \$18.00
Tree	5–6	2.20	18	10.00	27	26.00
	8	3.60	20	12.00	30	28.80

5.40 22 36 and T Branches-2 Feet Long 3 to 12 Inches in Diameter

21

14.00

16.00

33

36.00

41.00

4.20



15 to 36 Inches in Diameter

	AAICH	Illiera	OP TO 12	inches	
Size	Price	Size	Price	Size	Price
In.	Each	In.	Each	In.	Each
15	\$7.20	22	\$16.00	33	\$45.00
18	10.00	24	18.00	36	51.25
20	12.00	27	32.50		
21	14.00	30	36.00	• •	
21	14.00	-			
	1	/ and	T Rean	shoe	

With inlet 12 inches or under, take 5 times the price of one foot of pipe of same size. With inlet 15 inches or larger take 9 times the price of one foot of pipe of same size.

Double Y and T Branches

With inlet 12 inches and under take 8 times the price of one foot of pipe of same size. With inlet 15 inches or larger take 10 times the price of one foot of pipe of same size.

V Branches

Take 10 times the price of one foot of pipe of same size.

	Slants		
Diam. Inches 5 6 8 10 12 15	Made in Lengths Inches 4½, 9, 13x6½, 11, 15 4½, 9, 13x6½, 11, 15 9, 13x 11, 15	Thickness Inches Inches 5/8 5/8 3/4 7/8 1 11/8	Price Each \$2.20 2.20 3.60 4.20 5.40 7.20

Increasers and Reducers

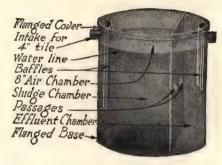
Size, 1 Small: End 3	NCHES	Price Each \$1.60 2.20	Size, Small End 4.5	Large End 6	Price Each \$2.20 2.20	Red	ucer Inches Large End 8. 10	Price Each \$3.60 4.20

Increasers or reducers not shown as standard take 6 times the price of one foot of pipe of the larger size.

S, P and Running Traps



San-Equip Septic Tanks

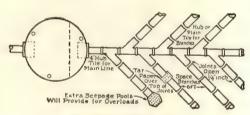


By use of this septic system the plumbing dealer is able to give complete sewage disposal service in the unsewered areas. Material is of 14-gauge copper alloy iron, rust-proof enameled. Design follows the specifications of the U. S. Public Health Service. Enamel process is unaffected by moisture, acids or soil.

The septic process simply stated is a digestion of sewage by which solids are eliminated and final disposal simplified. The treated sewage is to be disposed of by soil filter or by dry well or open streams when permissible.

The use of an iron tank for sewage treatment has been made practicable by the perfecting of the process for proofing the tank against rust. A mineral enamel is melted onto the entire surface of the tank. The 50 to 60 pounds of enamel on the smallest tank is equivalent to 15 to 20 coats of paint but more effective than a paint process because it is an all mineral compound and becomes part of the tank itself, increasing the tank walls to double thickness.

Materials needed are hub tile for a tight main line; hub or plain tile for branches which are to be 6 feet apart. Use 20 feet per person in porous soil, 30 to 40 feet if tight soil. Depth of tile should be 12 to 18 inches. Tile caps or tar paper over open joints. Grade 1 inch to 10 feet. Build up trenches with stone under and over tile if tight soil.



Plan View of Filter Bed

	Cap.	No. of	Diam.	Depth	Lgth.	Weight	Price
No.	Gal.	People	In.	In.	Ft.	Pounds	Each
402	200	6	38	48		295	\$44.00
403	300	10	47	48	• •		
405	500			48	* *	325	56.00
		20	52		5	420	90.00
410	1000	50	60	4.1	8	950	180.00
415	1500	75	60 -		12	1300	270.00
420	2000	100	60		16	1650	360.00
425	2500	125					
430			60		20	2000	450.00
	3000	150	$60 \cdot$		24	2350	540.00
435	3500	175	60		28	2700	630.00
440	4000	200	60		32	3050	720.00
			0.0		0-	avou	120.00

For larger systems up to 36000 gallons, ask for plans and prices.

Prices do not include any filter tile.

Allow 15 gallons per person for schools, 20 gallons for mills.

Nos. 402 and 403 are upright round tanks. The Nos. 405 and 410 are horizontal round tanks with two manholes.

Special plans for larger capacity disposal systems will be furnished upon application.

Standard Combination Boilers and Gas Water Heaters



The Standard is completely assembled; one self-contained unit ready to install. Has three openings to connect.

The incoming cold water is carried immediately to the bottom so that it does not chill the hot water in storage. It then feeds into the heating element where it is thinly spread out over this hot surface; is quickly heated and sent through the riser pipe in front of the flue, directly to top of boiler. This makes possible quick draws of hot water.

In addition to the heating element against which the intense blaze plays directly, the heat is then also deflected against the tank bottom. Before the hot burned gases are finally discharged they must travel through the flue that runs through the entire length of the boiler. This triple heating method means even heat, top and bottom, and a saving in gas.

The Standard is a dry heater. There is no moisture dripping on the floor. All excess air has been eliminated, and condensation troubles are prevented by the use of a special design spreader, a pan stand that closes the combustion chamber, all of which cause the gathering moisture to be evaporated and discharged in a dry state through the flue.

Connections are furnished for sediment faucet. Regular draining will remove possibility of sediment and will keep the heater working at its best.

Tank is of extra heavy electric-weld construction thoroughly galvanized inside and outside. Rear flue design Has one-piece burner, no gauze, especially designed for quick action and gas economy. High velocity gas stop. Adjustable to all gases, assuring a mixture that gives intense heat. Heating element is cast iron, will not burn out. Designed to send hot water rapidly, without trapping, directly to top of tank. Water flows in a thin sheet along inner walls of heating element and rises through tube. Pan stand is heat retaining, prevents draft interference and condensation troubles.

Size No. 1 is intended for barber shops, hairdressing parlors, drug stores and other places requiring only a moderate supply of hot water.

Size No. 2 is intended for the small home equipped with one bath, kitchen sink, and lavatory.

Size No. 3 is intended for the home equipped with one bath, kitchen sink, lavatory and laundry trays.

Water connections, all sizes, 3/4 inch. Gas connections, all sizes, 1/2 inch.

No.	Size	Approximate	Price
	Shell, Inches	Weight, Pounds	Each
1	12x36	75	\$33.00
2	12x48	90	35.00
3	14x48	125	38.00

Merion Automatic Storage Gas Water Heaters



The Merion Automatic Storage Gas Water Heater retains heat like a thermos bottle. It will not overheat nor fail to keep the water hot.

This heater is simple and fool proof. No adjustments are necessary. All adjustments are made at the factory and permanently set. It is easier to install than a range boiler. Only one gas and two water connections to make, saving labor and fitings.

The Merion costs no more to operate than a side heater and is constantly supplying hot water. It is fully insulated so that no waste heat is thrown off. One can place his hand on any part of the Merion and feel little heat, yet the water in the tank and pipes is 160 degrees.

The heater is automatically controlled. A dual action thermostat valve, self-adjusting to different quality and varying pressures of gas, controls both the pilot or carrying heat and the burner.

The self-closing lighting hole is used only when lighting the heater. The Merion has no door or other openings that would allow drafts to affect the burner.

The burner has no pilot light. When the tank is full of hot water thermostat re-

duces the gas flow so the burner acts as its own pilot. The burner has no gauze and will not clog up nor back fire.

The needle valve gas mixer is set for artificial gas and adjustable for natural gas.

The removable bottom cover allows easy access to heating parts.

The storage tank is extra heavy, electric weld construction. The body is heavy steel, finished in robin egg blue enamel. This is applied with compressed air and is practically indestructible. Unlike ordinary enamel, it cannot be harmed by washing or chipped off by striking any ordinary blow.

This heater is made in four sizes, as listed below.

No. 1 is the small family size, for small homes, bungalows, apartments, barber shops or beauty parlors.

No. 2 is the family size, for houses with one bath, laundry and kitchen fixtures, or any place requiring a good volume of hot water.

No. 4 is the size for duplex, or two-family houses, or a large home with two or three bath rooms, small apartments, office buildings, large barber shops and restaurants.

No.	Size Over All Inches	Capacity Gallons	Price Each
1	15x39	15	\$60.00
2	15x51	20	70.00
4	19x51	36	90.00

Arco Combined Tanks and Heaters Gas-Burning

A perfected gas-burning unit attaining a new high standard of operating efficiency and durability

The body of the tank is made of 1/2-inch steel, galvanized inside and outside to prevent rust or corrosion from dampness or corrosive chemical elements in the water.

Combustion chamber, burner, and flue pipe in each size tank, are co-related in size and carefully positioned to secure a complete combustion of the gas within the combustion chamber.

Equipped with thermostatic control which keeps the water at uniform temperature.

Exterior metal jacket finished in gray japan. All plate work is finished with black enamel.

Completely equipped with automatic thermostat control, burner, thermometer, diverter hood and shipped assembled in one unit.

Burns natural, manufactured or mixed gas, proper burner being supplied according to requirements.



No. G-25

No.	Cap.	Approx. Ship. Wt. Lbs.	Price Each	No.	Cap.	Approx. Ship. Wt. Lbs.	Price Each
G-20	20	190	\$66.00	G-35	35	250	\$93.00
G-25	25	210	75.00	G-40	40	270	102.00
G-30	30	230	84.00	G-45	45	290	111.00

Arco Combined Tanks and Heaters Coal-Burning

First and only self-contained, coal-burning hot water heater and storage tank combined.

The body of every Arco Tank is made of lesinch cold rolled steel, galvanized both

corrosion.

Fire pot is welded right into the tank, completely surrounded by water and is made of one-piece seamless steel, ½-inch

inside and outside to prevent rust and

Gravity circulator means quick, even heating and continuous circulation is maintained.

Equipped with an automatic regulator which keeps the water at the desired temperature.

The exterior metal jacket is finished with lustrous gray japan—the cap and base with a gleaming black. All plate work is finished with black porcelain enamel.

Completely equipped with automatic regulator, thermometer, ash pan, and shipped assembled in one unit.

Approximate

Burns hard or soft coal.

No.	Capacity Gallons	Shipping Weight Pounds	Price Each
30	30	325	\$84.00
40	40	360	102.00
50	50	385	120.00
60	60	535	138.00
80	80	560	180.00
100	100	580	222.00

No. 40

No. 30 Ohio Double Copper Coil Gas Water Heaters

Has a flared cast iron shell which allows space around the burner for proper combustion; the upper part of the shell fits snugly around the coil directing the hot gases directly through them. The door is fitted with self closing spring hinge and special catch for holding door open when heater is being lighted or cleaned. The double coils are 3/4-inch seamless 20-gauge copper tubing with red brass fittings and union connections. Has new type powerful burner with bottom gas connections. Drip cup attached to heater jacket and mixer locks through drip cup with bayonet catch.

Each coil is tested on 225 pounds cold water pressure.

Heater is furnished in black japan.



			Shipping		
	Height	Diameter	Shipping Weight	Capacity	Price
No.	Inches	Inches	Pounds	Gallons	Each
30	23	71/2	42	40-52	\$25.00

Bull's Eye Gas Water Heaters

This heater is built upon a new principle. Water completely surrounds the heat chamber so no heat escapes. As a result more hot water is produced with less gas and no heat adds further discomfort to kitchen or bath room in hot weather.

The water jacket and heat chamber are made of Dunite metal, a non-corrosive, strong and durable metal, and heavily galvanized with zinc, inside and out. Provided with a drain faucet for removing sediment.

The 2-piece construction insures against repairs. The outer water jacket and inner heat chamber are securely fastened together. The large water passage between jacket and heat chamber will not lime nor fill up and gives a rapid flow of water. Non-flash back gas burner is readily accessible through door.

Made in one size only. Designed for use with 30 to 60-gallon tanks, but may be used on larger tanks. For unusual requirements, 2 or more heaters may be grouped.

Recommended for heating houses, stores, garages, cottages and similar buildings as well as for water heating. Standard boiler rating for heating purposes: 120 square feet for steam; 200 square feet for hot water.

Connections: water, ¾-inch iron pipe; gas, ½-inch iron pipe; flue, 3-inch pipe.

Height of Heaterinches	21
Height Over All. inches Diameter. inches	31
Weightpounds	40
Priceeach	



Holyoke Kerosene Water Heaters



The Holyoke Kerosene Heater contains 32 f e e t of heavy copper coils and is so constructed that the hot gases strike the times before reaching the vent pipe. will produce hot water very rapidly and is economical.

According to tests, 1 gallon of kerosene oil will last from 12 to 24 hours of continuous burning.

The shell of the heater is of cast iron and made in three principal parts, front, back and cap. A cast iron

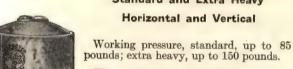
plate supporting the burner is fitted to the base of the heater. The half turn of the coils baffles the rising heated gases thus utilizing much heat which would otherwise go to waste.

The heater can be attached to any size tank and can be used in connection with or without coal range.

Diameter of shell, 6 inches. Diameter of base, 8 inches. Space required for base and reservoir, 9x17 inches. Height, 2814 inches. Net weight, 40 pounds. Shipping weight (crated), 55 pounds.

Electric Weld New Style Range Boilers

Standard and Extra Heavy Horizontal and Vertical



WOOD SI

Standard

These range boilers have five 1-inch tappings as follows: One side tapping 6 inches from the top; one 6 inches from the bottom (measurements to be made from the edge of the shell plate); two tappings in the top, and one in the bottom.

Standard weight boilers will be shipped unless otherwise specified.

3				
	Approx. Capacity Gallons	Diam. Inside of Sheli Inches	Length of Shell Feet	Price, Each Standard or Extra Heavy
	18	12	3	\$14.50
	24	12	. 4	15.75
	30	12	5	19.00
	32	14	4	21 00
	40	14	5	21.00
	42	16	4	24.00
	44	10	4:	26.00
	52	16	5	31.00
	66	18	5	38.00
	82	20	5	45.50
	100	22	5	62 50
	120	24	5	63.50
	144	24	6	72.50
	7.4.4	24	O	103.00
	192	24	8	132.00

Hawks Universal Boiler Stands

This stand will fit any size or make of boiler. It can be screwed into the bottom of the boiler and the locknut plate can be turned against the bottom of the boiler. It is neat and strong, and will support any boiler from 6 to 100 gallons capacity. The Tee is of malleable iron, hot galvanized inside and out. The stand is adjustable to any height by use of 11/4-inch pipe cut to length desired.

Tee furnished with outlets 3/4x3/4, 3/4 x 1/2 or 1 x 3/4 inches.

Each stand is packed complete. Price, with Regular Length Nipple each \$3.00



Sanders Adjustable Boiler Stands



This boiler stand requires no ring. The design is neat and strong and the stand is easily adjusted.

The legs for each size are interchangeable, any three legs will make a complete stand.

Only three sizes are required for the range of boilers from 18 to 192 gallons.

Packed in barrels.

Size No.	For Boiler Capacity Gallons	Plain	E, EACH—Galva- nized!
1	18 to 40	\$.60	\$1.20
2	42 to 66	2.00	4.00
3	82 to 192	2.75	5.50

No. 1720 Ring Adjustable Boiler Stands



				-1			
Size	For			Size	For		
Ring	Boiler	PRICE.	EACH	Ring	Boiler	PRICE.	EACH
In.	Gal.	Plain	Galv.	In.	Gal.	Plain	Galv.
12	18 - 30	\$1.25	\$2.50	20	82- 98	\$3.00	\$6.00
14	35 - 40	1.40	2.80	22	100 - 120	3.50	7.00
16 .	42 - 52	1.75	3.50	24	120 - 192	4.00	8.00
18	53 - 79	2.50	5.00				

Lawson Thermostatic Valves

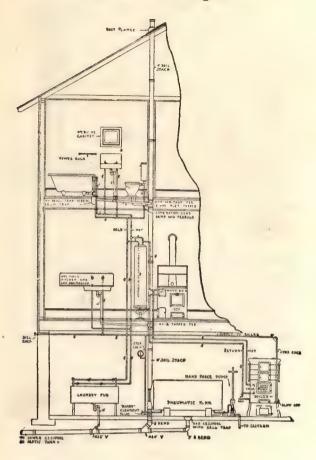


Maintains a constant uniform supply of hot water by increasing or diminishing flow of gas to burners, providing the advantage of an automatic storage system when installed in boiler.

No 3 recommended for natural gas only. No. 5A designed for single burners of capacities up to 50 cubic feet of gas per hour where gas pressure is uniform. No. 10A is of large capacity, recommended for all heaters installed in sections where gas pressure is low or where it varies.

No.	Water Conn. In.	Gas Conn. In.	Price Each	No.	Water Conn. In.	Gas Conn. In.	Price Each
740	Alle	ALL:	THE CT	740"	4.14.	Lills	Each
3A	1	3/8	\$8.50	10A	.1	1/2	\$20.00
5A,	1	1/2	12.00				

Plumbers' Checking List



A guide for selecting the proper fixtures and fittings, and a checking list to see that none is omitted. The illustration shows the plumbing and pneumatic fixtures for the ordinary city or country residence.

order of the state	
1—Bath Tub and Fittings	32—Pumps
2—Lavatories and Fittings	33—Black Pipe and Fittings
3—Basin Cocks	34—Galvanized Pipe and
4—Basin Supplies	Fittings
5—Basin Chains	35—Sewer Pipe and Fittings
6—Glass Shelves	36—Pipe Hangers and Straps
7-Tumbler and Tooth	37—Lead Pipe
Brush Holders	38—Solder
8—Mirrors	39—Lead Bends
9—Medicine Cabinets	40—Combination Lead and
10—Soap Holders	Brass Soldering
11—Bath Tub Seats	Nipples
12—Shower Baths	41—Soil Pipe and Fittings
13—Bath Sprays	42—Calking Lead
14—Towel Bars	43—Oakum
15—Water Closets	44—Cleanout Plugs
16—Closet Flanges	45—Ferrules
17—Toilet Paper Holders	46—Traps
18—Sinks and Backs	47—Roof Flanges
19—Sink Bibbs	48—Soldering Nipples
20—Sink Brackets	49—Soldering Unions
21—Range Boilers	50—Floor Drains
22—Range Boiler Stands	51—Sill Cocks
23—Boiler Fittings	52—Catch Basin Covers
24—Boiler Tubes	53—Stop Cocks
25—Boiler Stop Cocks	54—Corporation Cocks
26—Sediment Cock	55—Goosenecks
27—Water Heaters	56—Curb Cocks and Boxes
28—Laundry Tubs 29—Bibbs and Stand	57—Terra Cotta
30—Water Supply System	58—Cement 59—Tools
31—Storage Tanks	99—1 00f8
or -postage rames	

Useful Information

Valuable Practical Receipts and Compositions

Plumber's Solder.—Tin, 2 pounds, lead, 5 pounds. Hard Solder.—Copper, 1 pound, zinc, 8 ounces. YELLOW SOLDER.—Copper and zinc, equal parts. YELLOW Brass.—Zinc, 10 pounds, lead, 4 ounces, copper,

24 pounds.

Bronze Metal.—Antimony, 1 pound, tin, 100 pounds, copper, 2 pounds.

SILVER COLORED METAL.—Tin, 50 pounds, bismuth, 1 pound, antimony, 3 pounds, copper, 3 pounds.

IMITATION SILVER.—Copper, 4 pounds, zinc, 4 ounces. WHITE METAL.—Copper, 5 pounds, zinc, 3 pounds, lead,

1 pound, tin, 1 pound.

METAL FOR TAKING IMPRESSIONS.—Bismuth, 3 pounds. lead, 1 pound, tin, 8 ounces.

RIVET METAL.—Tin, 5 pounds, zinc, 2 pounds, copper,

10 pounds.

TINNING ACID FOR BRASS OR COPPER.—Muriatic acid, 1 pound, give it all the zinc it will dissolve; add 4 ounces of sal ammoniac, 1 pint water.

FOR TINNING BRASS.—Water, 4 gallons, salt, 1 pint, cream tartar, 1 pound.

MIXTURE FOR SILVERING METALS.—Dissolve 2 ounces of silver in 3 grains of corrosive sublimate, add salt, 8 quarts, tartaric acid, 4 pounds.

TO SEPARATE SILVER FROM COPPER.—Sulphuric acid, one part, nitric acid, one part, water, one part, then boil the metal in the mixture until it dissolves; add a little salt and the silver will subside.

Common Pewter.—Tin, 4 pounds, lead, 1 pound. QUEEN'S METAL.—Tin, 9 pounds, antimony, 1 pound, lead, 1 pound, bismuth, 1 pound.

Mock Platinum.—Copper, 4 pounds, zinc, 18 pounds.
Type Metal.—Lead, nine parts, antimony, two parts, bismuth, two parts.

CEMENT FOR STOPPING HOLES IN CAST IRON.-National Iron Filler Cement mixed with water until it is about the consistency of common paste, then it is ready for use. It should be kept in a dry place.

Proportions of Various Compositions in Common Use

Babbitt Metal.—Tin, 89, copper, 3.7, antimony, 7.3. Fine Yellow Brass.—Copper, 66, zinc, 34. Gun Metal Valves.—Copper, 90, tin, 10. White Brass.—Copper, 10, zinc, 80, tin, 10. German Silver.—Copper, 33.3, zinc, 33.4, nickel, 33.3. Church Bells.—Copper, 80, zinc, 5.6, tin, 10.1, lead, 4.3. Gongs.—Copper, 81.6, tin, 18.4. Lathe Brushes.—Copper, 80, tin, 20. Machinery Bearings.—Copper, 80, tin, 12.5. Sheathing Metal.—Copper, 56, zinc, 44. SHEATHING METAL.—Copper, 56, zinc, 44.

Safe Pressure on Bearings and Slides

Kind of Journal Bearing	Pressure per
Bearings on which the load is intermittent and	Sq. In. of
the speed slow, such as crank-pins of shearing	Projected Area Pounds
machines.	3,000
Cross-head neck journals.	1,300
Crank-pins of large, slow speed engines.	800-900
" marine engines, usually	400-500
Main crank-shaft bearings-marine engines	
(slow)	600
Main crank-shaft bearings-marine engines	000
(fast)	400
Locomotive driving-axle journal	180-350
Railway journals	200
Fly-wheel shaft journals	150-250
Small engine crank pins	
Simpler clide blooks meaning engines	150-200
Stationary ongine slide blocks	100
Stationary engine since blocks	25—125
Stationary engine slide blocks	30 60
Propeller thrust bearings	50- 70
Shaft in cast iron steps or seats	15

National Pipe



Two important processes have been developed, one of which makes the smaller sizes, 4-inch and under, of National Pipe more resistant to corrosion, while the other makes all National Butt-weld Pipe free from welding-scale. To the trade these are known as the Spellerizing and Scale Free processes, respectively.

Spellerizing is a method of treating metal, which consists in subjecting the heated bloom to the action of rolls having regularly shaped projections on their working surface, then subjecting the bloom while still hot to the action of smooth faced rolls and repeating the operation, whereby the surface of the metal is worked so as to produce a uniformly dense texture better adapted to resist corrosion, especially in the form of pitting.

Inasmuch as the Spellerizing process is entirely mechanical and does not in any way depend upon skilled labor, beyond keeping up the machinery involved, uniform treatment is assured. This process is applicable to the smaller sizes of pipe; such as 4 inches and under, although it is possible in special cases to Spellerize pipe a few sizes larger than 4 inches. This process is especially desirable for the smaller sizes on account of the thinner walls. The larger sizes, owing to their thicker walls, do not require as much extra work of this character.

The Spellerizing process produces a fine-grained, uniform, dense texture which is better adapted to resist corrosion than ordinary pipe.

By subjecting National Butt-weld Pipe to the recently evolved scale-removing process, the mill-scale, or welding-scale, which has long been considered inevitable on butt-weld pipe, is removed, leaving the surfaces of the pipe smooth and clean and giving a full interior diameter, and an ideal surface for a uniform and close adherence of galvanizing or other protective coatings. Thus the working capacity and the durability of the pipe are appreciably increased.

The National Scale Free Pipe is now made by practically the same process as heretofore used in making regular National Butt-weld Pipe, the chief difference being that the pipe is passed through a series of rolls in addition to the sizing and straightening rolls the first stand of rolls in this series reduces the size of the pipe by literally crushing the pipe down. Since the mill-scale, or welding-scale, is brittle and somewhat harder than the metal at this stage of manufacture, this crushing or distorting of the pipe loosens the scale and it falls off, leaving a clean surface. The pipe then passes to other rolls of this series, where it is further reduced in size; after cooling, the loose scale is washed out with water or blown out by compressed air, no acid pickling bath being used. The crop ends are then removed, the pipe threaded, tested and inspected in the manner as was customary with all National Butt-weld Pipe.

Additional advantages to those mentioned above, include: Elimination of the wear and tear on valves and fittings formerly caused by loose scale; better adaptation to exposed installations due to the clean, smooth surfaces; reduced frictional resistance and a further reduction of any tendency to corrosion caused by scale dropping away and leaving exposed surfaces.

In order that consumers may know positively they are receiving National Tube Company Pipe the name National is rolled, at regular intervals, on every length of welded tubular products manufactured, except on sizes under ½-inch where this is not mechanically feasible: on these smaller sizes the name National appears on the metal tag attached to each bundle of pipe.

National Standard Pipe

Black and Galvanized

Revised January 1, 1923



The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths unless otherwise ordered.

Taper of threads is $\frac{3}{4}$ -inch diameter per foot length for all sizes.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling, but shipping lengths of small sizes will usually average less than 20 feet,

On sizes made in more than one weight, weight desired must be specified.

For pipe smoothed on the inside, known as reamed and drifted, an extra charge will be made above standard pipe.

For galvanized, or coated pipe, an extra charge will be made above black.

On orders calling for commercial sizes of pipe which are finished with threads and couplings, in sizes ½ to 12-inch, inclusive, and where orders specify quantity in linear feet, it is understood that random lengths fitted with threads both ends and coupling one end will be supplied and the measurement is charged from end to end, that is over all, including coupling.

If cut lengths of any sizes are ordered, instructions must appear on the face of the order whether plain ends, threads only or threads and couplings are required. The pipe proper is cut to the length specified for plain ends or threads only, and if cut lengths with threads and couplings are specified, the practice is the same with the exception that the couplings are charged separately whether they are shipped loose or screwed on the pipe.

All Weights and Dimensions are Nominal

				177-	T		_
			Thick	WT.	LBS. PER F	No. of	
Size		. INCHES	ness	Plain	and	d Thread	
Inches	External	Internal	Inche	End	Couple	d Inch	per
1/8	. 405	. 269	. 068	. 244			Foot
1/4	. 540	.364				27	$\$.051/_{2}$
1/ ₄ 3/ ₈ 1/ ₂ 3/ ₄	.675		.088	. 424	1 1=0	18	.06
78		. 493	.091	. 567	. 568	18	.06
1/2	.840	.622	.109	. 850	. 852	14	.081/2
	1.050	.824	.113	1.130	1.134	14	
1	1.315	1.049	.133	1.678	1.684	111/2	.111/2
11/4	1.660	1.380	.140	2.272			.17
		21000		2.212	2.281	$11\frac{1}{2}$.23
$1\frac{1}{2}$	1.900	1.610	.145	2.717	0.791	111/	
2	2.375	2.067	.154		2.731	111/2	.271/2
21/2	2.875	2.469		3.652	3.678	$11\frac{1}{2}$.37
3 /2			.203	5.793	5.819	8	.581/2
	3.500	3.068	.216	7.575	7.616	8	.761/2
$3\frac{1}{2}$	4.	3.548	.226	9.109	9.202	8	.92
4	4.500	4.026	.237	10.790	10.889	8	
5	5.563	5.047	.258	14.617	14.810		1.09
			.200	11.011	14.010	8	1.48
6	6.625	6.065	.280	18.974	19.185	0	
8	8.625	8.071	.277			8	1.92
8	8.625	7.981		24.696	25.	8	2.50
10	10.750		.322	28.554	28.809	8	2.88
		10.192	.279	31.201	32.	8	3.20
10	10.750	10.136	.307	34.240	35.	8	3.50
10	10.750	10.020	.365	40.483	41.132	8	
12	12.750	12.090	. 330	43.773	45.	8	4.12
12	12.750°	12.	.375	49.562			4.50
			.010	40.002	50.706	8	5.07

National Extra Strong and Double Extra Strong Pipe

Black and Galvanized Revised January 1, 1923



Furnished with plain ends and in random lengths unless otherwise ordered.

Random length of extra strong and double extra strong pipe is considered to be 12 feet to 22 feet, we to have the privilege, however, of supplying not exceeding 5 per cent of total order in lengths from 6 to 12 feet.

For pipe fitted with threads only or with threads and couplings, an extra charge will be made above plain ends.

For cut lengths, an extra charge will be made above random.

For galvanized, or coated pipe, an extra charge will be made above black.

All Weights and Dimensions are Nominal

Extra Strong

		7	Thick-	Weight Pounds	Price
Size	DIAMETER, External	Internal	Inches	per Foot Plain Ends	Foot
1/8	.405	.215	.095	.314	\$.12
1/4	.540	.302	.119	. 535	$.07\frac{1}{2}$
3/8	.675	. 423	.126	.738	$.07\frac{1}{2}$
1/2	.840	. 546	.147	1.087	.11
3/8 1/2 3/4	1.050	. 742	.154	1.473	.15
1	1.315	.957	.179	2.171	.22
$\frac{11/4}{11/2}$	1.660	1.278	.191	2.996	.30
11/2	1.900	1.500	,200	3.631	$.36\frac{1}{2}$
2	2.375	1.939	.218	5.022	$.50\frac{1}{2}$
$2^{1/2}$	2.875	2.323	.276	7.661	.77
3	3.500	2.900	.300	10.252	1.03
31/2	4	3.364	.318	12.505	1.25
4	4.500	3.826	.337	14.983	1.50
5	5.563	4.813	375	20.778	2.08
6	6.625	5.761	, 432	28.573	2.86
8	8.625	7.625	.500	43.388	4.34
10	10.750	9.750	. 500	54.735	5.48
12	12.750	11.750	. 500	65.415	6.55

The permissible variation in weight is 5 per cent above and 5 per cent below.

Double Extra Strong

Size Inches	DIAMETER External	, Inches Internal	Thick- ness Inches	Weight Pounds per Foot Plain Ends	Price per Foot
1/2	.840	.252	.294	1.714	\$.32
$\frac{1/2}{3/4}$	1.050	. 434	. 308	2.440	.35
1	1.315	. 599	. 358	3.659	.37
11/4	1.660	.896	.382	5.214	$.52\frac{1}{2}$
$\frac{11/4}{11/2}$	1.900	1.100	.400	6.408	.65
2	2.375	1.503	. 436	9.029	.91
21/2	2.875	1.771	.552	13.695	1.37
3	3.500	2.300	. 600	18.583	1.86
31/2	4.	2.728	. 636	22.850	2.30
	4.500	3.152	. 674	27.541	2.76
5	5.563	4.063	.750	38,552	3.86
6	6.625	4.897	.864	53.160	5.32
8	8.625	6.875	.875	72.424	7.25

The permissible variation in weight is 10 per cent above and 10 per cent below.

National Large O. D. Pipe

			Plain Er	nds	•			
All Weights and Dimensions are Nominal								
O. D.				KNESS WALL,	INCHES			
In.	1/4	5/16	3/8	7/16	1/2	9/16		
14	\$3.68	\$4.57	\$5.46	\$6.34	\$7.21	\$8.08		
15	3.94	4.91	5.86	6.81	7.75	8.68		
16	4.21	5.24	6.26	7.28	8.28	9.28		
17	4.48	5.57	6.66	7.74	8.82	9.88		
18	4.74	5.91	7.06	8.21	9.35	10.48		
20		6.58	7.86	9.15	10.42	11.68		
21		6.91	8.27	9.61	10.95	12.28		
22		7.24	8.67	10.08	11.49	12.88		
24			9.47	11.01	12.55	14.09		
26			10.27	11.95	13.62	15.29		
28				12.88	14.69	16.49		
30				13.82	15.76	17.69		
O. D.		Prici		HCKNESS WAL	L, IN.			
In.	5/8	11/16	3/4	7/8	1	11/8		
14	\$8.93	\$9.78	\$10.62	\$12.27	\$13.89	\$15.47		
15	9.60	10.51	11.42	13.20	14.96	16.68		
16	10.27	11.25	12.22	14.14	16.03	17.88		
17	10.94	11.98	13.02	15.07	17.09	19.08		
18	11.60	12.72	13.82	16.01	18.16	20.28		
20	12.94	14.19	15.42	17.88	20.30	22.68		
21	13.61	14.92	16.23					
22	14.27	15.65	17.03					
24	15.61	17.12	18.63					
26	16.94	18.59	20.23					
28	18.28	20.06	21.83					
30	19.61	21.53	23.43					
			Weigh	ts				
O. D.				THICKNESS	WALL, IN.	7/		
In.		4	5/16	3/	_	7/16		
14	36.		45.682	54.		63.371		
15		383	49.020	58.		68.044		
16	42.	053	52.357	62.	579	72.716		

30	19.61 21.5	3 23.43							
Weights									
O. D.		Wr., Les. PER Fr., T	HICKNESS WALL, IN.						
In.	1/4	5/16	3/8	7/16					
14	36.713	45.682	54.568	63.371					
15	39.383	49.020	58.573	68.044					
16	42.053	52.357	62.579	72.716					
17	44.723	55.695	66.584	77.389					
18	47.393	59.032	70.589	82.061					
20		65.708	78.599	91.407					
21		69.045	82.604	96.079					
22	*****	72.383	86.609	100.752					
24	*****		94.619	110.097					
26			102.629	119.442					
28				128.787					
30	*****			138.132					
0. D.		WT., LBS. PER FT., T	ICENESS WALL, IN.—						
In.	1/2	%16	5/8	11/16					
14	72.091	80.726	89.279	97.748					
15	77.431	86.734	95.954	105.091					
16	82.771	92.742	102.629	112.433					
17	88.111	98.749	109.304	119.776					
18	93.451	104.757	115.979	127.118					
20	104.131	116.772	129.330	141.804					
21	109.471	122.780	136.005	149.146					
22	114.811	128.787	142.680	156.489					
24	125.491	140.802	156.030	171.174					
26	136.172	152.818	169.380	185.859					
28	146.852	164.833	182.730	200.545					
30	157.532	176.848	196.081	215.230					
O. D		WT., LBS. PER FT., T	HICENESS WALL, IN						
In.	3/4	7/8	1	11/8					
14	106.134	122.654	138.842	154.695					
15	114.144	132 .	149.522	166.710					
16	122.154	141.345	160.202	178.725					
17	130.164	150.690	170.882	190.740					
18	138.174	160.035	181.562	202.756					
20	154.194	178.725	202.923	226.786					
21	162.204								
22	170.215								
24	186.235								
26	202.255								
28	218.275								
30	234.295								
	ha narmissible v	ariation in weig	ht is 10 ner cer	t above or					

The permissible variation in weight is 10 per cent above or 10 per cent below.

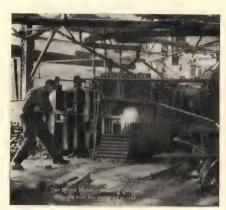
Pipe will be shipped in random lengths, plain ends, unless otherwise ordered.

For cut lengths, an extra charge above random will be made.

For threaded pipe an extra charge above plain end will be made.

Byers Genuine Wrought Iron Pipe

For Water, Steam, Air, Gas and Oil



Among Many Elements in the High Quality of Byers Wrought Iron Pipe Is the Care Used in Puddling or Refining Iron

Purchasers of pipe should note that we carry 2 kinds of welded pipe, namely:

(1) Genuine Wrought Iron Furnished Black or Galva-

(2) Steel nized.

In wrought iron pipe we carry only one make, Byers, which universally is conceded to be the highest grade wrought iron pipe obtainable.

Caution

When ordering pipe, do not use the term "wrought pipe" as it means both steel and iron and therefore means nothing in filling an order for pipe; say "steel" or "wrought iron as the case may be. Also state whether black or galvanized.

Prices

The sizes and list prices of wrought iron pipe are the same as for steel pipe but different discounts apply as wrought iron pipe is a quality product used principally on account of its high rust resistance, and its manufacture involves a larger amount of costly hand labor.

Identifying Marks



Byers Pipe is easily identified by the spiral stripe painted on each length in red or other bright color. The spiral marking effectively prevents mistakes and substitution. In addition the Byers name and 2 figures indicating year of manufacture are rolled in the metal at intervals of 3 or 4 feet as shown in the illustration. Byers' name and weight (standard or extra heavy) stamped on every nipple.

Where to Use Byers Pipe

Byers Pipe is recommended for installation in permanent buildings of every description, where corrosion is a factor, as in plumbing and heating systems. Also for underground steam, water and gas piping. It should be pointed out that the cost of Byers Pipe, while somewhat higher than steel pipe, is a small item in the total installation cost of a pipe system, yet the life of the entire investment usually depends on the life of the pipe. If the pipe fails the whole system has to be replaced. Where pipes are concealed in walls, partitions and floors, failures are especially costly.

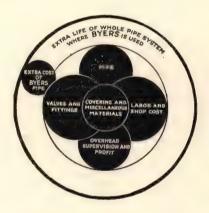
Instances are frequent where the rusting through of one single piece of pipe, in one spot, has caused damage to buildings and furnishings, amounting to 10 times more than the cost of all the piping in the whole building. The economy of using Byers Pipe cannot, therefore, be too strongly emphasized for office buildings, hotels, schools, residences, hospitals,

Installation Cost of Pipe

In the average plumbing, heating or power piping system, the cost of the pipe alone is only from 5 to 15 per cent of the installation cost.

Other items are shop cost, fittings, fixtures, valves, bends, labor of installing, supervision and overhead, making up from 85 to 95 per cent of the installation cost.

These items are the same whether wrought iron or steel pipe is installed and the extra cost of Byers Pipe, therefore, rarely adds over 10 per cent to the total cost of the pipe system installed.



The diagram above represents the items of cost in the aver-

It shows why the extra cost of Byers Pipe is insignificant compared with its extra life in service.

Its great rust-resistance insures against heavy replacement expense during the useful life of the system.

Service of Byers Pipe

For over 60 years A. M. Byers Company has produced the one product-wrought iron pipe-in strict adherence to a standard of purity of material and honesty of manufacture

established long before cheap pipe was known.

The record of the company is on millions of feet of pipe, installed under varying conditions during half a century, and still enduring.

No claims that A. M. Byers Company can make would offset this record if it were a poor one; and likewise no reasons that can be advanced for the superiority of Byers Pipe can be as convincing as the records of its long and satisfactory service.

Byers Genuine Wrought Iron Pipe

List Prices, Weights, Dimensions and Areas of Byers Pipe

Black and Galvanized
All Dimensions and Weights Are Nominal Standard Weight

					3	tandard	Standard					
Size 1/4 3/8 1/2 3/4 1 11/4 11/2 21/2 31/2 41/2 5 6 7 8 8 9 10 10 11 12 12	Weld Butt a a a a a a a a a a a a a a a a a a	List Price per Foot \$.06 .08 1/2 .11 1/2 .23 .27 1/2 .23 .27 1/2 .76 1/2 .92 1.09 1.27 1.48 1.92 2.38 2.50 2.88 3.45 3.20 3.50 4.12 4.63 4.50 5.07	Outside Diam. Inches . 540 . 675 . 840 1.050 1.315 1.660 1.900 2.375 2.875 3.500 4.000 5.563 6.625 7.625 8.625 9.625 10.750 10.750 11.750 12.750 12.750	Thickness Inches	Inside Diam. Inches	Standard Weight Plain Ends Lbs. per Ft. 424 5667 850 1.130 1.678 2.272 2.717 2.272 2.717 3.652 5.793 7.575 9.109 10.790 12.538 14.617 18.974 23.544 24.696 28.554 33.907 31.201 34.240 40.483 45.557 43.773 49.562 Extra Plain		Hydrostatic Test Lba. 750 750 750 750 750 1000 1000 1000 1000	Internal Circumference Inches 1.131 1.536 1.938 2.573 3.277 4.316 5.039 4.316 5.039 6.472 7.761 9.610 11.115 12.617 14.125 15.821 19.016 22.023 25.320 25.029 28.045 31.985 31.432 34.510 37.941 37.652	External Circumference Inches 1 . 696 2 . 120 2 . 639 3 . 299 4 . 131 5 . 215 5 . 969 5 . 215 5 . 969 7 . 461 9 . 032 10 . 995 12 . 566 14 . 137 15 . 708 17 . 477 20 . 813 23 . 955 27 . 096 30 . 238 33 . 772 33 . 772 33 . 772 36 . 914 40 . 055 40 . 055	Area of Internal Diameter Sq. Inches . 102 . 188 . 299 . 527 . 854 1.483 2.021 1.483 2.021 1.483 2.021 1.483 2.021 1.483 2.021 3.333 4.753 7.349 9.831 12.667 15.873 19.919 28.776 38.600 62.589 81.402 80.491 78.619 94.767 114.554 112.808	Area of External Diameter Sq. Inches . 229 . 358 . 554 . 866 . 358 2.164 2.835 2.164 2.835 4.430 6.492 9.621 12.566 15.904 19.635 24.306 34.472 45.663 58.426 72.760 90.763 90.763 90.763 108.434 127.677 127.677
1/4 3/8 1/2 3/4 1 1/4 1 1/2 2 1/2 3 3 1/2 4 1/2 5 6 7 8 9 10 111	Butt a a a a Lap a a a a a a a a a a a a a	\$.07 ¹ / ₂ .07 ¹ / ₂ .11 .15 .22 .30 .36 ¹ / ₂ .50 ¹ / ₂ .77 1.03 1.25 1.50 2.08 2.86 3.81 4.34 4.90 5.48 6.10	.540 .675 .840 1.050 1.315 1.660 1.900 2.375 2.875 3.500 4.500 5.663 6.625 7.625 8.625 9.625 10.750	.122 .129 .151 .157 .183 .195 .204 .195 .204 .223 .306 .325 .344 .363 .383 .441 .511 .510 .510 .510 .510	. 295 .417 .539 .735 .949 1. 269 1. 491 1. 929 2. 311 2. 887 3. 350 3. 811 -4. 275 4. 797 5. 743 6. 603 7. 604 8. 604 9. 729 10. 729 11. 729	535 .738 1.087 1.473 2.171 2.996 3.631 2.996 3.631 5.022 7.661 10.252 12.505 14.983 17.611 20.778 28.573 38.048 43.388 48.728 54.735 60.075 65.415	. 539 .743 1.091 1.484 2.185 3.024 3.676 5.086 7.790 10.382 12.687 15.193 17.842 21.012 28.902 38.490 43.879 49.461 55.750 61.175 66.666	750 750 750 750 750 1500 1500 2500 2500 2000 2000 2000 1800 1800 1500 1500 1000	$\begin{array}{c} .927 \\ 1.310 \\ 1.693 \\ 2.309 \\ 2.973 \\ 3.987 \\ 4.684 \\ 6.060 \\ 7.260 \\ 9.070 \\ 10.524 \\ 11.973 \\ 13.430 \\ 15.070 \\ 18.042 \\ 20.744 \\ 23.888 \\ 27.030 \\ 30.565 \\ 33.706 \\ 36.848 \end{array}$	1.696 2.120 2.639 3.299 4.131 5.215 5.969 5.215 5.969 7.461 9.032 10.995 12.566 14.137 15.708 14.477 20.813 23.955 27.096 30.238 33.772 36.914 40.055	$\begin{array}{c} .068 \\ .137 \\ .228 \\ .424 \\ .707 \\ 1.265 \\ 1.746 \\ 1.265 \\ 1.746 \\ 2.924 \\ 4.194 \\ 6.546 \\ 8.815 \\ 11.409 \\ 14.352 \\ 18.073 \\ 25.901 \\ 34.250 \\ 45.411 \\ 58.143 \\ 74.344 \\ 90.413 \\ 108.054 \end{array}$. 229 .358 .554 .866 1.358 2.164 2.835 4.430 6.492 9.621 12.566 15.904 19.635 24.306 34.472 45.663 58.426 72.760 90.763 108.434 127.677
12		6.55	12, 790	. 910		ouble Ext		1000	00.040	40.000	100,004	121.011
Qi-a	Wald	List Price	Outside Diam. Inches	Thickness Inches	Inside Diam. Inches	Standard Weight Plain Ends Lbs. per Ft.	ia iioavy	Hydro- static Test Lbs.	Internal Circum- ference Inches	External Circum- ference Inches	Area of Internal Diameter Sq. Inches	Area of External Diameter Sq. Inches
Size 1/2 3/4 1 11/4 11/2 11/2 21/2 3 31/2 4 41/2 5 6 NO	Weld Butt "" Lap "" "" "" "" "" "" "" "" "" "" "" "" "	per Foot \$.32 .35 .37 .52½ .65 .65 .91 1.37 1.86 2.30 2.76 3.26 3.86 5.32 uplings for	.840 1.050 1.315 1.660 1.900 1.900 2.375 2.875 3.500 4.000 4.500 5.000 5.563 6.625	. 307 .318 .369 .393 .411 .411 .447 .565 .615 .651 .690 .727 .768 .884	. 226 .413 .576 .874 1.078 1.480 1.742 2.270 2.697 3.119 3.546 4.028 4.857	1.714 2.440 3.659 5.214 6.408 9.029 13.695 18.583 22.850 27.541 32.530 38.552 53.160	of Regularly furnished without threads and couplings	1500 1500 1500 1500 1500 2500 2500 2500	1.710 1.297 1.809 2.746 3.387 4.651 5.473 7.131 8.473 9.799 11.165 12.654 15.257	2. 639 3. 299 4. 131 5. 215 5. 969 5. 969 7. 461 9. 032 10. 995 12. 566 14. 137 15. 708 17. 477 20. 813	. 040 . 134 . 260 . 600 . 913 . 913 . 1. 722 2. 384 4. 047 5. 712 7. 642 9. 877 12. 741 18. 525	54. 1666 . 554 . 866 1. 358 2. 164 2. 835 2. 835 4. 430 6. 492 9. 621 12. 566 15. 904 19. 635 24. 306 34. 472

Byers Genuine Wrought Iron Pipe

Weights, Dimensions and Areas of Byers Pipe

(All Dimensions and Weights are Nominal)

Line Pipe

Size 3/8 1/2 3/4 1 11/4	Outside Diameter Inches . 675 . 840 1. 050 1. 315 1. 660	Thickness Inches 1.093 . 111 . 116 . 136 . 145	Inside Diameter Inches . 489 . 617 . 819 1. 043 1. 369	Standard Weight Plam Ends Lbs. per Ft 567 . 850 1.130 1.678 2.272	Standard Weight Threaded with Cou- pling Lbs. per Ft 570 . 860 1.140 1.700 2.300	Hydrostatic Test Lbs. 750 750 750 750 †	Internal Circum- ference Inches 1.536 1.938 2.573 3.277 4.316	External Circumference Inches 2.120 2.639 3.299 4.131 5.215	External Diameter Inches . 968 1.109 1.375 1.687 2.094	-Couplings- Length Inches 1^{11} / $_{2}$ 1^{1} / $_{2}$ 2 2 2 2 2 2 2 2 2 2	Weight Pounds . 137 . 187 . 425 . 612 1,000
$1\frac{1}{2}$ 2 $2\frac{1}{2}$ 3 $3\frac{1}{2}$	1.900 2.375 2.875 3.500 4.000	.148 .158 .208 .221 .231	1.604 2.060 2.460 3.059 3.538	2.717 3.652 5.793 7.575 9.109	2.750 3.750 5.900 7.700 9.250	† 1800 1500 1500 1500	$\begin{array}{c} 5.039 \\ 6.472 \\ 7.761 \\ 9.610 \\ 11.115 \end{array}$	$\begin{array}{c} 5.969 \\ 7.461 \\ 9.032 \\ 10.995 \\ 12.566 \end{array}$	2.375 2.937 3.562 4.187 4.750	31/8 35/8 41/8 41/4 43/8	1.580 2.400 4.437 5.200 6.900
4 4 ¹ / ₂ 5 6 7	4.500 5.000 5.563 6.625 7.625	. 242 . 252 . 263 . 286 . 307	4.016 4.496 5.036 6.053 7.010	10.790 12.538 14.617 18.974 23.544	11,000 12,800 15,000 19,450 24,050	1500 1500 1500 1500 1500	$12.617 \\ 14.123 \\ 15.821 \\ 19.016 \\ 22.023$	14.137 15.708 17.477 20.813 23.955	5.250 5.812 6.375 7.500 8.656	4 ³ / ₈ 5 5 5 6 ¹ / ₄	7.500 10.062 11.000 16.500 24.300
8 9 10 10	8.625 8.625 9.625 10.750 10.750	. 283 . 329 . 349 . 284 . 313	8.059 7.967 8.927 10.181 10.124	24.696 28.554 33.907 31.201 34.240	25, 550 29, 350 34, 750 32, 750 35, 750	1000 1200 1000 1000 1000	25.320 25.031 28.045 31.983 31.805	27.096 27.096 30.238 33.772 33.772	9.500 9.500 10.812 11.937 11.937	61/4 61/4 67/8 7	24.000 24.000 37.000 44.000 44.000
10 11 12 12	10.750 11.750 12.750 12.750	. 372 . 382 . 336 . 382	10.005 10.985 12.077 11.985	40, 483 45, 557 43, 773 49, 562	41.850 47.050 45.450 51.150	1000 1000 1000 1000	31.432 34.510 37.941 37.652	33.772 36.914 40.055 40.055	11.937 12.968 13.937 13.937	7 7 7	44,000 48,000 51,500 51,500

†1½ and 1½-inch B. W. 1200 lbs., L. W. 1500 lbs.
Prices on Oil Well Tubing, Casing, Line Pipe and Drive Pipe will be furnished on application.

Large O. D. Pipe, Plain Ends, Weight per Foot

Size 0, D. 1/	4	5/16	3/2	7/18	1/	THICKNE	BS WALL, IN	HES-					
14 36.	000	44.796	53.510 57.437	62 142	70.691	%16 70 160	% 97 5 4 0	11/16	$\frac{3}{4}$ 104.074	7/8 120.274	1 136.147	11/ ₈ 151,692	Prices
16 41.5	237	51 341	61 364	71 305	91 164	85.051 90.942 102.724	100.092	103.051	111.928	129.438	146.620	163.474	on

Number of Feet per Ton-Number of Feet per Minimum Car Load

							-ar Load		
	Thread and	Standard Weig	ht			-	Forter 11		
	Coupling	Approximate	APPROXIMATE	NUMBER OF		Thread and	Extra Heavy		
C.	Weight per	Number of	FEET PER	CARLOAD OF		Coupling Weight per	Approximate	APPROXIMAT	E NUMBER of
Size	Foot, Lbs.	Feet per Ton	36000 Lbs.	46 000 Lbs.	Size	Foot, Lbs.	Number of	FEET PER	CARLOAD OF
1/4	.425	4705	85000	109000			Feet per Ton	36 000 Lbs.	46 000 Lbs
3/8	. 568	3521	64000	82000	74	539	3710	67500	86000
1/2	. 852	2347	42500	54500	3/8	.743	2688	49000	62500
1/4 3/8 1/2 3/4	1.134	1763	32000		1/2	1.091	1829	33200	42500
1 /4	1.684	1187		41000	1/4 3/8 1/2 3/4	1.484	1344	24500	31200
11/4	2.281	876	21500	28000	1	2.185	910	16800	
11/4			16000	20500	11/4	3.024	661	12000	21200
$1\frac{1}{2}$	2.731	732	13250	17000	11/2	3.676	543	10000	15350
2	3.678	543	10000	12800	2	3.024	392		12700
$2\frac{1}{2}$	5.819	343	6200	7950	21/2	3.676		7200	9200
3	7.616	262	4750	6100	3 /4		258	4710	6100
$3\frac{1}{2}$	9.202	217	4000	5120	31/2	5.086	192	3520	4500
4	10.889	183	3300	4220	4	7.790	157	2880	3680
41/2	12.642	158	2850	3650		10.382	131	2400	3075
5 1	14.810	135	2450		41/2	12.687	112	2050	2650
6	19.185	104	1880	3140	5	15.193	95	1740	2220
7	23.769			2410	6	17.842	69	1265	1615
8		84	1520	1950	7	21.012	51	950	
	25.000	80	1440	1840	8	28,902	45	835	1210
8	28,809	69	1250	1595	9	38.490	40		1060
9	34.188	58	1054	1350	10	43.879		740	950
10	32.000	62	1125	1440	12		35	660	845
11	46,247	43	780	1000		49.461	30	560	700
12	50.706	39	710	910	* * * *	55.750	* * * *		* * * * *
		~~	120	910	* * * *	61.175			
						66.666			****

American Spiral Riveted Plain End Pipe



When ordering, information should be given as to use for when ordering, information should be given as to use for which pipe must be suitable, working pressure, size wanted and quantity, whether used for special or high temperature work, if for water, whether gravity or pumping, whether buried in ground, laid on surface, or hung from structure.

Working pressure should not be more than 25 per cent of the ultimeter strength or bursting pressure.

the ultimate strength or bursting pressure.

Prices are for plain end pipe without flanges.

Inside			Approx. Weight	Approx. Bursting		
Thebes	Inside	Thickness	Asphalted	Strength		
18			per Foot	per Sq. In.		
5			2.3	2000	\$.39	\$.53
6	4		3.7			.73
6						1.04
7	6	*14	6.6	1560	a a at	1.21
7 *14	6		6.2	1070		1.22
8	7	*14	7.7	1340	1.01	1.41
8 *14 8. 8 1170 1.16 1.62 2.17 9 16 8.0 835 1.12 1.56 9 *14 9.9 1045 1.30 1.81 9 *12 13.9 1460 1.74 2.45 1.73 10 16 8.8 750 1.24 1.73 10 11 110 935 1.45 2.01 11 16 9.7 680 1.35 1.90 11 16 9.7 680 1.35 1.90 11 *14 12 16 60 625 1.48 2.92 11 *14 13.0 780 1.72 2.40 11 *12 16.6 620 2.08 2.92 12 16 10.6 625 1.48 2.07 3.89 1.72 2.40 1.72 2.40 1.72 2.40 1.72 2.40 1.72 2.40 1.72 2.40 1.72 1.41 1.33 1.0 2.92 1.12 1			10.7		1.34	
9			8.8	1170	1.16	1.62
9	8					2.17
10			9.9		1.30	1.81
10						2.45
10		*14	11.0		1.45	2.01
11 *14 12 0 850 1.58 2.20 12 16 10.6 625 1.48 2.92 12 *14 13.0 780 1.72 2.40 12 †12 18.2 1080 2.27 3.19 13 14 14.1 720 1.86 2.59 13 *10 22.5 120 1.86 2.59 13 *10 24.5 1295 2.99 4.22 14 14 15.9 670 2.00 2.91 14 *12 22.2 2.940 2.77 3.89 14 *14 17.0 625 2.17 3.12 15 *12 22.7 6 72.7 3.89 14 *14 18.1 15.5 2.97 4.16 15 *12 23.7 3.12 3.43 4.75 15 *12 23.7 3.6 3.33			15.3			2.69 1.90
12			12 0		1.58	2.20
12 *14 13.0 780 1.72 2.40 12 †12 18.2 1080 2.27 3.19 13 14 14.1 14.0 2.76 3.88 13 †14 14.1 7.70 1.86 2.59 13 †10 24.5 1295 2.99 4.22 14 14 15.9 670 2.99 4.22 14 *12 22.2 2.940 2.77 3.89 14 *10 27.6 1210 3.38 4.75 15 *14 17.0 625 2.17 3.12 15 *10 29.6 1125 3.62 5.10 15 *10 29.6 1125 3.62 5.10 16 *14 18.1 585 2.36 3.35 16 *14 18.1 585 2.36 3.15 16 *14 18.1 585 2.36 <td< th=""><th>11</th><th></th><th></th><th></th><th></th><th>2.92</th></td<>	11					2.92
12	12	*14	13.0		1.72	2.40
13 14 14.1 720 1.86 2.59 13 †10 24.5 1295 2.99 4.22 14 14 15.9 670 2.00 2.91 14 †10 27.6 1210 3.38 4.75 15 †14 †10 27.6 1210 3.88 4.75 15 †12 23.7 875 2.97 4.16 15 †10 29.6 1125 3.62 5.10 16 14 18.1 585 2.36 3.33 16 †10 31.5 1050 3.85 5.42 16 8 38.1 1290 4.66 6.54 16 6 44.7 1520 5.47 7.67 18 14 19.9 520 2.63 3.64 16 6 44.7 1520 5.47 7.67 18 14 19.9 520 2.63			18.2		2.27	3.19
13 *12 19.7 1010 2.46 3.45 14 14 15.9 670 2.00 2.91 14 *12 22.2 940 2.77 3.89 14 *10 27.6 1210 3.38 4.75 15 14 17.0 625 2.17 3.12 15 *14 17.0 625 2.17 4.16 15 *10 29.6 1125 3.62 5.10 16 14 18.1 585 2.36 3.33 16 *12 25.2 2.820 3.15 4.33 16 *10 31.5 1050 3.85 5.42 16 8 38.1 1290 4.66 6.54 16 8 44.7 1520 5.47 7.67 18 14 19.9 520 2.63 3.66 18 14 19.9 520 2.63 3.66 <th></th> <th>14</th> <th>14.1</th> <th></th> <th>1.86</th> <th>2.59</th>		14	14.1		1.86	2.59
14 *12 22 940 2.77 3.89 14 *10 27.6 1210 3.38 4.75 15 *14 17.0 625 2.77 3.12 15 *14 17.0 625 2.77 4.16 15 *10 29.6 1125 3.62 5.10 16 *14 18.1 585 2.36 3.33 16 *12 25.2 820 3.15 4.43 16 *10 31.5 1050 3.85 5.42 16 *10 31.5 1050 3.85 5.42 16 6 44.7 1520 5.47 7.66 16 6 44.7 1520 5.47 7.66 18 *14 19.9 520 3.40 4.84 18 *10 34.5 940 4.22 595 18 *6 49.0 1360 6.00 8.41 <th>13</th> <th></th> <th>19.7</th> <th></th> <th>2.46</th> <th>3.45</th>	13		19.7		2.46	3.45
14 *12 22. 2 940 2.77 3.88 4.75 15 14 17. 0 625 2.17 3.12 15 *12 23. 7 875 2.97 4.16 16 *10 29.6 1125 3.62 5.10 16 *14 18.1 585 2.36 3.33 16 *10 31.5 5.55 2.36 3.55 5.42 16 *10 31.5 5.1050 3.85 5.42 3.66 6.54 16 6 *10 31.5 3.66 6.54 4.42 3.86 6.65 4.42 4.66 6.54 4.7 1520 5.47 7.67 7.67 7.67 18 14 19.9 520 5.47 7.67 7.67 18 14 19.9 520 5.47 7.67 7.67 18 18 †10 34.5 9.40 4.22 4.84 18 †10 34.5 9.40 4.22 4.84 18 18 19 4.06 4.00 4.84		14	15.9	670	2.00	2.91
18 14 17.0 625 2.17 3.12 15 *12 23.7 875 2.97 4.16 16 14 18.1 585 2.36 5.10 16 *14 18.1 585 2.36 3.33 16 *10 31.5 1050 3.85 5.42 16 6 *10 31.5 1050 3.85 5.42 16 6 44.7 1520 5.47 7.67 18 14 19.9 520 2.63 3.66 6.54 18 *14 19.9 520 2.63 3.60 4.84 18 *10 34.5 940 4.22 5.95 18 18 6 49.0 1360 6.00 8.41 20 14 22.1 470 2.92 4.06 20 *10 38.3 840 4.68 6.59 20 *6		*12	22.2		2.77	
15		14	17.0	625	2.17	3.12
16 *12 18 1 585 2.36 3.33 16 *10 31.5 1050 3.85 5.42 16 8 38.1 1290 4.66 6.54 16 8 38.1 1290 4.66 6.54 16 6 44.7 1520 5.47 7.67 18 14 19.9 520 2.63 3.66 18 *12 27.6 730 3.40 4.84 18 *10 34.5 940 4.22 5.95 18 8 41.6 1140 5.09 7.16 18 8 41.6 1140 5.09 7.16 18 8 41.6 1140 5.09 7.16 18 8 41.6 1140 5.09 7.16 18 8 41.6 1140 5.09 7.16 20 10 49.0 1360 6.60 <	15	*12	23.7	875	2.97	4.16
16 *12 25. 2 820 3. 15 4. 43 16 †10 31. 5 1050 3. 85 5. 42 16 6 8 38. 1 1290 4. 66 6. 54 16 6 44. 7 1520 5. 47 7. 67 18 14 19. 9 520 2. 63 3. 66 18 *10 34. 5 940 4. 22 5. 95 18 8 41. 6 1140 5. 09 7. 16 18 8 41. 6 1140 5. 09 7. 16 18 6 49. 0 1360 6. 00 8. 41 20 *12 30. 6 660 3. 82 5. 37 20 *12 30. 6 660 3. 82 5. 5. 7 20 *10 38. 3 840 4. 68 6. 59 20 8 46. 2 1030 5. 65 7. 94 20 8 46. 2 1030 5. 65 7. 94 22 *12 33. 7 7. 595			18.1		2.36	3.33
166 8 38.1 1290 4.66 7.54 7.67 18 14 19.9 520 2.63 3.66 18 *12 27.6 730 3.40 4.84 1.80 *10 34.5 940 4.22 5.95 7.16 18 8 41.6 1140 5.09 7.16 8.41 6.1140 5.09 7.16 8.41 4.01360 6.00 8.41 4.22 1.30 6.660 3.82 5.37 7.06 6.60 3.82 5.37 20 *10 38.3 840 4.68 6.59 220 8.46.2 1030 5.65 7.94 8.65 7.92 2.22 12 33.7 595 4.21 5.91 7.92 2.22 12 33.7 595 4.21 5.91 7.94 4.21 5.91 7.94 4.21 5.91 7.94 4.47 6.62 9.28 2.22 16 5.95 5.11 10.94 2.2 765 5.15 7.95 4.21 5.91 7.92 1.82 4.47 6.41 7.22 18 <td< th=""><th></th><th>*12</th><th>25 2 31 5</th><th>820 1050</th><th>3.15</th><th></th></td<>		*12	25 2 31 5	820 1050	3.15	
16 6 44.7 1520 5.47 7.67 18 14 19.9 520 2.63 3.66 18 *12 27.6 730 3.40 4.84 18 †10 34.5 940 4.22 5.95 18 6 49.0 1360 6.09 8.41 20 14 22.1 470 2.92 4.06 20 *12 30.6 660 3.82 5.37 20 †10 38.3 840 4.68 6.59 20 6 62 1030 5.65 7.94 20 6 64.2 1030 5.65 7.94 20 6 54.1 1220 6.62 9.28 22 12 33.7 595 4.21 5.91 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.76 22 †8 50.5 9.48 10.27 24 †2<	16	. 8	38.1	1290	4.66	6.54
18 *12 27 6 780 3.40 4.84 18 †10 34.5 940 4.22 5.95 18 6 49.0 1360 6.09 7.16 18 6 49.0 1360 6.00 8.41 20 *12 30.6 660 3.82 5.37 20 †10 38.3 840 4.68 6.59 20 6 54.1 1220 6.62 9.28 20 6 54.1 1220 6.65 7.94 20 6 54.1 1220 6.62 9.28 22 12 33.7 765 5.15 7.94 22 †8 50.8 940 6.22 8.28 22 †8 50.5 9.48 10.21 12.2 24 *12 36.5 540 4.24 6.22 8.79 24 *12 36.5 540	16		44.7	1520	5.47	3.66
18 †10 34.5 940 4.22 5.95 7.16 18 6 49.0 1360 6.00 8.41 20 14 22.1 470 2.92 4.68 20 *10 38.3 840 4.68 6.59 20 \$6 54.1 1220 6.62 9.28 22 \$12 33.7 595 4.21 5.91 22 †10 42.2 765 5.15 7.26 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 24 *12 36.5 540 4.47 6.41 24 *12 36.5 540 4.47 6.41 24 *10 45.7 705 5.59 7.88 10.21 24 †8 55.2 820 6.75 9.48 24 †8 55.8 59		*12	27 6	730	3.40	4.84
18 6 49.0 1360 6.00 8.41 20 *14 22.1 470 2.92 4.06 20 *12 30.6 660 3.82 5.37 20 †10 38.3 840 4.68 6.59 20 6 54.1 1220 6.62 9.28 22 12 33.7 595 4.21 59.28 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 24 12 36.5 540 4.47 6.41 24 *10 45.7 705 5.59 7.88 10.21 24 *10 45.7 705 5.59 7.88 10.21 24 *10 49.5 650 6.75 9.48 24 †8 55.2 820			34.5			5.95 7.16
20		6	49.0	1360	6.00	8.41
20 †10 38.3 840 4.68 6.59 20 8 46.2 1030 5.65 7.94 20 6 54.1 1220 6.62 9.28 22 12 33.7 595 4.21 5.91 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 24 12 36.5 540 4.47 6.41 24 *10 45.7 705 5.59 9.48 24 *10 45.7 705 5.59 9.48 24 *10 45.7 705 5.59 9.48 24 †8 55.2 820 6.75 9.48 24 †8 55.5 2820 6.75 9.48 26 12 39.5 505 4.94 6.94 26 *12 39.5 505 4.94 6.94			22.1 30.6		2.92	4.06 5.37
20 6 54 1 1220 6.62 9.28 22 12 33.7 595 4.21 5.91 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 22 †8 50.8 940 6.22 8.73 24 12 36.5 540 4.47 6.41 24 *10 45.7 705 5.59 7.88 10.21 24 †8 55.2 820 6.75 9.48 24 †8 55.2 820 6.75 9.48 26 *10 49.5 650 6.05 8.53 26 *10 49.5 650 6.05 8.53 26 *8 59.8 795 7.30 10.27 28 *8 63.6 735 7.78 10.93 28 *8 63.6 735 7.78	20	†10	38.3	840	4.68	6.59
22 12 33.7 595 4.21 5.91 22 *10 42.2 765 5.15 7.28 22 6 59.5 1108 7.28 10.21 24 *10 45.7 705 5.59 7.88 24 *10 45.7 705 5.59 7.88 24 *10 45.7 705 5.59 7.88 24 *8 55.2 820 6.75 9.48 24 *8 55.5 2820 6.75 9.48 24 *8 55.5 2820 6.75 9.48 26 *12 39.5 505 4.94 6.94 26 *12 39.5 505 4.94 6.94 6.94 26 *8 59.8 795 7.30 10.27 28 10.27 28 8.30 6.60 6.32 8.90 22 8.90 237 13.14 30 1			46.2 54.1		5.65 6.62	9.28
22 †8 50.8 940 6.22 8.73 22 6 59.5 1108 7.28 10.21 24 12 36.5 540 4.47 6.41 24 †8 55.2 820 6.75 9.88 24 6 64.6 1015 7.90 11.09 26 12 39.5 505 4.94 6.94 26 *10 49.5 650 6.05 8.53 26 *8 59.8 795 7.30 10.27 26 *10 49.5 650 6.05 8.53 26 *8 59.8 795 7.30 10.27 28 *8 63.6 735 7.78 10.31 28 *8 63.7 6.8 560 6.94 9.78 30 *8 68.7 6.6 870 9.37 13.14 30 *8 68.7 6.65	22	12	33.7	595	4.21	5.91
22 6 59.5 1108 7.28 10.21 24 12 36.5 540 4.47 6.41 24 *10 45.7 705 5.59 7.88 24 †8 55.2 820 6.75 9.48 24 6 64.6 1015 7.90 11.09 26 12 39.5 505 4.94 6.94 26 *10 49.5 650 6.05 8.53 26 6 70.0 935 8.56 12.01 28 10 51.7 605 6.32 8.90 28 *8 63.6 735 7.78 10.93 28 *6 76.6 870 9.37 7.78 10.93 28 *8 63.6 735 7.78 10.93 10.93 28 *6 76.6 870 9.37 13.80 10.83 11.80 30 *8 <th></th> <th></th> <th>42.2 °</th> <th></th> <th>£ 22</th> <th>8.73</th>			42.2 °		£ 22	8.73
24 *10 45.7 705 5.59 7.88 24 †8 55.2 820 6.75 9.48 24 6 64.6 1015 7.90 11.09 26 12 39.5 505 4.94 6.94 26 †8 59.8 795 7.30 10.27 26 †8 59.8 795 7.30 10.27 26 6 70.0 935 8.56 12.01 28 10 51.7 605 6.32 8.90 28 *8 63.6 735 7.78 10.93 28 *6 76.6 870 9.37 13.14 30 *8 68.7 685 8.39 11.80 30 *6 80.5 810 9.84 13.80 32 *6 87.1 760 10.65 4.94 13.80 32 *6 87.1 760 10.65	22	6	59.5	1108	7.28	10.21
24 † 8 55.2 820 6.75 9.48 26 12 39.5 505 4.94 6.94 26 *10 49.5 650 6.05 8.53 26 † 8 59.8 795 7.30 10.27 26 6 70.0 935 8.56 12.01 28 10 51.7 605 6.32 8.90 28 † 6 76.6 870 9.37 13.14 30 10 56.8 560 6.94 9.78 30 *8 68.7 685 8.39 11.80 30 *6 80.5 810 9.84 13.80 32 *8 74.3 645 9.10 12.76 32 *6 87.1 760 10.65 14.93 32 *6 87.1 760 10.65 14.93 34 10 65.4 490 8.00 11.25 </th <th></th> <th></th> <th>36.5 45.7</th> <th></th> <th>4.47 5.59</th> <th>7.88</th>			36.5 45.7		4.47 5.59	7.88
26 12 39.5 505 4.94 6.94 26 *10 49.5 650 6.95 7.30 10.27 26 6 70.0 935 8.56 12.01 28 10 51.7 605 6.32 8.90 28 *8 63.6 735 7.78 10.93 28 †6 76.6 870 9.37 10.93 28 †6 76.6 870 9.37 10.93 30 10 56.8 560 6.94 9.78 30 *8 68.7 685 8.39 11.80 32 10 61.6 525 7.53 10.60 32 *8 74.3 645 9.10 12.76 34 10 65.4 490 8.00 11.25 34 *8 78.8 600 9.63 13.53 34 †6 93.6 715 11.45	24	† 8	55.2	820	6.75	
26 *10 49.5 650 6.05 8.53 26 †8 59.8 795 7.30 10.22 28 10 51.7 605 6.32 8.90 28 *8 63.6 735 7.78 10.93 28 †6 76.6 870 9.37 13.14 30 10 56.8 560 6.94 9.78 30 †6 80.5 810 9.84 13.80 32 10 61.6 525 7.53 10.60 32 *8 74.3 645 9.10 12.76 32 *6 87.1 760 10.65 14.93 34 10 65.4 490 8.00 11.25 34 *8 78.8 600 9.63 13.53 34 *6 93.6 715 11.45 16.06 34 *6 93.6 715 11.45 16.06<			04.0 39.5		4.94	
26 6 70.0 935 8.56 12.01 28 8 63.6 735 7.78 10.93 28 6 76.6 870 9.37 13.14 30 10 56.8 560 6.94 9.78 30 *8 68.7 685 8.39 11.80 30 †6 80.5 810 9.84 13.80 32 10 61.6 525 7.53 10.60 32 *8 74.3 645 9.10 12.76 34 10 65.4 490 8.00 11.25 34 10 65.4 490 8.00 11.25 34 *8 78.8 600 9.63 13.33 34 †6 93.6 715 11.45 16.06 35 10 69.1 470 8.45 11.90 36 †6 97.8 680 11.96 16.77 <th>26</th> <th>*10</th> <th>49.5</th> <th>650</th> <th>6.05</th> <th>8.53</th>	26	*10	49.5	650	6.05	8.53
28 10 51.7 605 6.32 8.90 28 * 8 63.6 735 7.78 10.93 28 † 6 76.6 870 9.37 13.14 30 10 56.8 560 6.94 13.14 30 † 6 80.5 810 9.84 13.80 32 10 61.6 525 7.53 10.60 32 † 8 74.3 645 9.10 12.76 32 † 6 87.1 760 10.65 14.93 34 † 6 87.1 760 10.65 14.93 34 * 8 78.8 600 9.63 13.53 34 * 8 78.8 600 9.63 13.53 34 * 6 93.8 715 11.45 16.06 36 * 8 83.4 570 10.20 14.33 36 * 8 83.4 570 10.20		T 8			8.56	12.01
28 † 6 76 6 870 9.37 13.14 30 10 56.8 560 6.94 9.78 30 *8 68.7 685 8.39 11.80 30 † 6 80.5 810 9.84 13.80 32 * 8 74.3 645 9.10 12.76 32 † 6 87.1 760 10.65 14.93 34 † 0 65.4 490 8.00 11.25 34 * 8 78.8 600 9.63 13.53 34 * 8 78.8 600 9.63 13.53 34 * 8 78.8 600 9.63 11.95 36 10 69.1 470 8.45 11.90 36 * 8 83.4 570 10.20 14.33 36 † 6 97.8 680 11.96 16.77 38 10 73.2 445	28	10	- 51.7		6.32	8.90
30 10 56.8 560 6.94 9.78 30 *8 68.7 685 8.39 11.80 30 †6 80.5 810 9.84 13.80 32 10 61.6 525 7.53 10.60 32 *8 74.3 645 9.10 12.76 32 †6 87.1 760 10.65 14.93 34 10 65.4 490 8.00 13.53 34 †6 93.6 715 11.45 16.06 34 †6 93.6 715 11.45 16.06 36 *8 83.4 570 10.20 14.33 36 †6 97.8 680 11.96 16.77 38 *8 88.1 540 10.75 15.10 38 *8 88.1 540 10.75 15.10 38 *8 88.1 540 10.75		. 0	76.6	870	9.37	13.14
30 † 6 80.5 810 9.84 13.80 32 10 61.6 525 7.53 12.76 32 * 8 74.3 645 9.10 12.76 32 † 6 87.1 760 10.65 14.93 34 * 8 78.8 600 3.00 11.25 34 † 6 93.6 715 11.45 16.06 36 10 69.1 470 8.45 11.90 36 † 8 83.4 570 10.20 14.33 36 † 6 97.8 680 11.96 16.77 38 10 73.2 445 8.91 12.55 38 * 8 88.1 540 10.75 15.10 38 * 8 88.1 540 12.62 17.69 40 * 8 92.4 515 11.29 15.87 40 * 8 92.4 515 11.29	30	10	56.8			
32 * 8 74.3 645 9.10 12.76 32 † 6 87.1 760 10.65 14.93 34 10 65.4 490 8.00 11.25 34 † 6 93.6 715 11.45 16.06 36 10 69.1 470 8.45 11.90 36 * 8 83.4 570 10.20 14.33 36 † 6 97.8 680 11.96 16.77 38 10 73.2 445 8.91 12.55 38 † 6 103.2 640 10.75 15.10 38 † 6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 * 8 92.4 515 11.29 15.87 40 † 6 108.5 610 13.27 15.87 42 10 80.9 400 9.83 13.85 42 * 8 97.2 490 11.84 16.64 42 * 8 97.2 490 11.84 16.64 42 * 6 114.0 580 13.93 19.55			80.5		9.84	13.80
32 † 6 87.1 760 10.65 14.93 34 10 65.4 490 8.00 11.25 34 * 8 78.8 600 9.63 13.53 34 † 6 93.6 715 11.45 16.06 36 * 8 83.4 570 10.20 14.33 36 † 6 97.8 680 11.96 16.77 38 * 10 73.2 445 8.91 12.55 38 * 8 88.1 540 10.75 15.10 38 † 6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 * 8 92.4 515 11.29 15.87 40 * 8 92.4 515 11.29 15.87 40 * 8 92.4 515 11.29 15.87 40 * 8 92.4 515 11.29<					7.53	10.60
34 10 65.4 490 8.00 11.25 34 *8 78.8 600 9.63 13.53 34 †6 93.6 715 11.45 16.06 36 10 69.1 470 8.45 11.90 14.33 36 †6 97.8 680 11.96 16.77 38 *8 88.1 540 10.75 15.10 38 †6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 *8 92.4 515 11.29 15.87 40 *6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 *8 97.2 490 11.84 16.64		. 0			10.65	14.93
36 *8 83 4 570 10.20 11.96 16.75 38 10 73.2 445 8.91 12.55 38 *8 88.1 540 10.75 15.10 38 †6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 *8 92.4 515 11.29 15.87 40 *6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 *6 114.0 580 13.93 19.52		10	65.4		8.00	11.25
36 *8 83 4 570 10.20 11.96 16.75 38 10 73.2 445 8.91 12.55 38 *8 88.1 540 10.75 15.10 38 †6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 *8 92.4 515 11.29 15.87 40 *6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 *6 114.0 580 13.93 19.52	34	† 6	93.6	715	11.45	16.06
38 10 73.2 445 8.91 12.55 38 *8 88.1 540 10.75 15.10 38 †6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 *8 92.4 515 11.29 15.87 40 †6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 *6 114.0 580 13.93 19.52		10	69.1		8.45	11.90
38 10 73.2 445 8.91 12.55 38 *8 88.1 540 10.75 15.10 38 †6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.20 40 *8 92.4 515 11.29 15.87 40 †6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 *6 114.0 580 13.93 19.52		† 6	97.8	680	11.96	16.77
38 † 6 103.2 640 12.62 17.69 40 10 76.7 420 9.37 13.29 40 * 8 92.4 515 11.29 15.87 40 † 6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 * 8 97.2 490 11.84 16.64 42 † 6 114.0 580 13.93 19.52	38	10	73.2	445	8.91	
40 *8 92.4 515 11.29 15.87 40 †6 108.5 610 13.27 18.60 42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 †6 114.0 580 13.93 19.52		† 6	103.2	640	12.62	17 69
42 10 80.9 400 9.83 13.85 42 *8 97.2 490 11.84 16.64 42 †6 114.0 580 13.93 19.52	40	10	76.7	420	9.37	13.20
42 10 80.9 400 9.83 13.85 42 * 8 97.2 490 11.84 16.64 42 † 6 114.0 580 13.93 19.52			108.5	610	13.27	10.00
42 7 6 114.0 580 13.53 15.52	42	10	80.9	400	9.83	13.85
*Extra heavy. †Double extra heavy.	42	† 6	114.0	580	13.93	19.52
	*Extr	a heavy.	†Double extr	a heavy.		

Pipe Cutting and Fitting

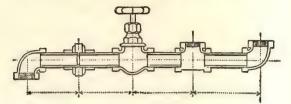


Diagram Showing Screwed Valves and Fittings

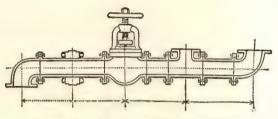


Diagram Showing Flanged Valves and Fittings

We are in a position to furnish quickly pipe cutting, threading and fitting all sizes of pipe to order.

In laying out work of this kind, great care should be taken in making sketches. All measurements should be given center to center as shown in diagrams. It is also necessary to know for what purpose the pipe is to be used and pressure required to stand.

If flanged fittings are to be used state if desired drilled and if with bolts and gaskets complete. Flanges, flanged fittings and valves are drilled in multiples of four, so that they may be made to place in any quarter and bolts straddle the center line. It is always advisable to send templates when drilling of valves or fittings is required.

Cuts and Threads for Standard Wrought Pipe

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/8 1/4 3/8	\$.05 .05	$\frac{1^{1}/_{4}}{1^{1}/_{2}}$	\$.07 .08	41/2	\$.35 .45	9	\$1.25 1.50
	.05	2	.10	5	55	12	2.50
1/2 3/4	.05	$\frac{2^{1}/2}{3}$.15	6	.70	• •	
1	.06	$3\frac{1}{2}$.25	8	1.00	* *	****

Locknut Threads

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Trice Each
1/4	\$.10	3/4	\$.10	$1\frac{1}{2}$	\$.16	3	\$.40
1/4 3/8 1/2	.10	1	.12	2	.20	31/2	.50
1/2	.10	11/4	.14	21/2	.30	4	.78

Locknut Nipples

Made to order and charged as cut pipe, threads extra.

Drilling and Tapping Pipe Headers

Made from Either 3 or 4-inch Pipe

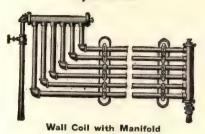
Size, Hole Iron Pipe	PRICE, PER H	OLE, DRILLED ED. EACH	Size, Hole Iron Pipe	PRICE, PER H	
Inches	Standard	Ex. Heavy	Inches	Standard	Ex. Heavy
1/2 3/4	\$.15	\$.18	1	\$.20	\$.25
3/4	.15	.18	11/4	.25	.30

Drilling and Tapping Pipe Headers

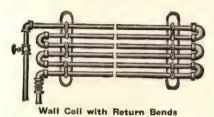
Made from Either 5 or 6-inch Pipe

Size, Hole Iron Pipe Inches		Hole, Drilled PED, EACH Ex. Heavy	Size, Hole Iron Pipe Inches	PRICE, PER HO AND TAPI Standard	LE, DRILLED PED, EACH Ex. Heavy
$\frac{1}{2}$ $\frac{3}{4}$	\$.18 .18	\$.20 .20	$\frac{11/4}{11/2}$	\$.30 .40	\$.35 .45
1	.25	.30	2 .	. 45	.50

Pipe Coils



We own and operate in connection with our general supply business and mechanical department a thoroughly equipped, modern and up-to-date pipe shop, and are prepared to furnish promptly pipe cut and threaded to sketch or order in any size from %-inch to 16-inch.



The pipe shop is thoroughly equipped with the latest pipe machines and with drill presses, etc., so that we can handle all sizes of pipe work, both screwed and flanged. Experienced workmen are employed, and work of this class is given special and proper extension. and prompt attention.

Accuracy and promptness assured.

Our facilities for cutting, threading, drilling and tapping pipe used in construction of coils, etc., are complete in every detail. Estimates furnished upon application.

Steel Flag Poles

Black and Galvanized



For parks, schools, colleges, country clubs, play grounds, public buildings, private buildings, etc.

Made from black or galvanized wrought steel pipe of different

Each joint is properly telescoped, strongly pinned and then welded, which reinforces the joints and also prevents water from entering the joint and causing rust.

For setting in a concrete foundation or on roofs.

Fitted at top with hook and pulley.

Steel cord and rope hitch for fastening cord is included.

Ball ornament is supplied for top, which is made of copper.

The flag pole is attractive and durable and practically any size and length desired can be furnished.

Poles can be furnished in lengths 20 feet to 100 feet over all.

Shipments are made in sections not to exceed 36 feet in length.

Prices upon application.

Wrought Iron Couplings





Standard Couplings

Size	Nominal		combinings	PRICE, EACH	
Pipe	O. D.	Length	RE	. —	R. & L
Inches	Inches	Inches	Black	Galv.	Black
78	32	15/16	\$.05	\$.06	
14	%	$1\frac{1}{32}$.05	.06	\$.07
3/8	32	$1\frac{5}{32}$.06	.08	.08
1/2	1 1/16	156	.07	.10	.11
3/4	$1\frac{1}{32}$	19/16	.10	.13	.15
1	1%	113/6	.13	.18	.20
11/4	$1\frac{31}{32}$	21/6	.17	.25	.25
11/2	2 6 2	25/6	.21	.32	.30
2	$2\frac{23}{32}$	29/6	28	.40	.50
$2^{1/2}$	35/6	27/8	.40	.55	.85
3	315/6	31/6	, 60	.80	1.20
$3\frac{1}{2}$	4 7/8	37%	.80	1.05	1.60
4	415/4	376	1.00	1.40	2.00
41/2	$5\frac{17}{33}$	35%	1.50	2.00	2.00
5	61/4	41%	1.65	2.25	
6	$7\frac{3}{32}$	41%	2.40		
7	8 9 2 2	41/		3.25	
8	$9\frac{1}{4}$	45/8	3.25		
9	105/6	51/8	4.25		
10	115/8	01/8	5.50		
12	197/	61/8	7.50		
14	131/8	61/8	10.00		
0.4		tra Heavy			
3/8	.95	11/2	\$.14	\$.20	
1/2	1.13	$1\frac{7}{8}$.14	.20	\$.20
3/4	1.44	21/8	.20	.25	.30
1	1 .63	23/8	.26	.32	.40
11/4	2.07	25/8	.34	.42	.45
11/2	2.31	27/8	.42	.55	.55
2	2.81	31/8	.56	.75	.70
21/2	3.31	31/2	.80	1.05	
3	4.00	311/2	1.20	1.50	
31/2	4.63	414	1.60	1.90	* * * *
4	5.13	417	2.00	3.00	• • • •
-	Hydra	ulic Rece			
3/					
1/8	.95	11/2	\$.25	\$.30	
1/3	1.13	1/8	. 25	.30	
3/4	1.44	21/8	.30	.35	
1	1.63	23/8	. 35	.40	
11/4	2.07	25/8	.45	.55	
11/2	2.31	27/8	. 55	.70	
2,	2.81	$3\frac{1}{8}$.70	.90	
$2^{1/2}$	3.31	$3\frac{1}{2}$.95	1.20	
3	4.00	311/6	1.40	1.70	
31/2	4.63	41/4	1.85	2.15	
4	5.13	41/4	2.25	3.25	
		-/4	4110	7,20	

Wrought Iron Long Screws



Furnished with coupling and locknut faced. Long screws, longer than standard, furnished on

special order and charged as cut pipe, with threads, couplings and locknuts extra.

Pipe	Length	PRICE,	EACH	Size Pipe	Standard Length	T)	- 77
Inches	In.	Black	Galv.	Inches	In.	Black	E, EACH Galv.
1/4	$2\frac{1}{2}$	\$.30	\$.35	$1\frac{1}{2}$	51/2	\$1.30	\$1.60
3/8	3	. 35	. 40	2	6	1.70	2.10
1/2	$3\frac{1}{2}$. 40	. 50	$2^{1/2}$	7	2.70	3.10
3/4	4	. 55	. 66	3	8	3.70	4.70
11/4	$\frac{4^{1}}{2}$.75	1.00	31/2	81/2	5.40	6.50
	5	1.00	1.25	4	9	6.60	7.75
in	ordering	, specify	length	of thread	wanted.		

Wrought Nipples

Black Right-hand Nipples





lose		

							PRICE,	Each
Size		LEN	CTH, INC	CHES			Close	_
Inches	Close	Short		Lo	ng		or Short	Long
1/0	3/	11/2	2,	$2\frac{1}{2}$,	3,	31/2	\$.04	\$.06
1/8	7%	11/2	2,	$2\frac{1}{2}$,	3,	31/2	.04	.06
3/8	1/8	172		272,				
	3/4 7/8	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$.04	.06
1/2 3/4 1	11/8	11/2	2,	$2\frac{1}{2}$,	3,	31/2	.05	.07
37.	13/8		$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4	.06	.09
1 /4	118	$\frac{2}{2}$	91/	9,	21/	$\frac{1}{1}$.08	.13
1	$1\frac{1}{2}$		$2\frac{1}{2}$	3,	$3\frac{1}{2}$.00	. 13
$\frac{11/4}{11/2}$	15/8	$2\frac{1}{2}$	3,	$3\frac{1}{2}$	4,	$4\frac{1}{2}$.11	.17
117		$2\frac{1}{2}$		$3\frac{1}{2}$		41/2	.13	.20
172	13/4	272	3,	072,	4,			
2	2	$2\frac{1}{2}$	ა,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$.18	.27
21/2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4,	41/2	, 5	.39	. 59
3	$\frac{25}{8}$	3	$3\frac{1}{2}$	1	41/2	, 5	.48	.72
31/2	$2\frac{3}{4}$	4	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6	.75	1.05
4	27/8	4	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6	.85	1.20
41/2	27/8	4	112	5,	$5\frac{1}{2}$	6	1.25	1.70
272	2/8	417	772	FIL		01/		
5	3	$4\frac{1}{2}$	5,	$5\frac{1}{2}$	6,	$6\frac{1}{2}$	1.55	2.45
6	31/8	41/2	5.	$5\frac{1}{2}$	6.	$6\frac{1}{2}$	1.85	2.90
7	31/4		514	6	,	-/2	3.20	3.60
		5 5	51/	0				
8	$3\frac{1}{2}$	9	0/2	6			3.55	4.05
9	35/8	5					5.25	
10	37/8	5					6.75	
	412	5						,
12	$4\frac{1}{2}$	Ð	111				8.00	****

Extra Long Black Right-hand Nipples



					PRICE.	EACH-			
Size						INCHES-			
Inches	4	5	6	7	8	9	10	11	12
1/8\$.07\$.08	\$.10	\$.12	\$.14	\$.15	\$.17	\$.18	\$.19
1/4	.07	.08	. 10	. 12	.14	. 15	.17	. 18	. 19
3/8	.07	.08	. 10	.12	.14	.15	.17	.18	. 19
14	.08	. 10	.12	.14	. 16	.18	. 20	.22	.23
3/2	.00	.11	.13	.17	.18	.20	.22	.24	.26
1/2 3/4		.15	.18	.23	.25	.28	.31	.34	
1		. 13	. 10	. 20	.20	.20	.01	.01	. 50
11/4		. 20	.24	. 29	.33	.36	. 40	.44	. 47
11/2		.25	.29	.36	. 40	. 45	. 50	.54	. 59
2		.32	.38	.50	. 54	. 59	. 65	.72	.77
01/	60			00	0.7	1 00	1 17	1 20	1.35
21/2			. 68	.90	.97	1.06		1.26	
3				1.08	1.20	1.33	1.45	1.58	1.70 2.05
$3\frac{1}{2}$	• • •		* * *	1.30	1.45	1.60	1.75	1.30	2.05
4				1.52	1.69	1.87	2.05	2.22	2.40
41/2				2.25	2.50	2.75	2.95	3.17	3.40
5				2.5 G	2.83	3.10	3.35	3.60	3.85
							4 00	4 00	4 05
6				3.05	3.35	3.70	4.00	4.30	4.65
7				4.05	4.45	4.90	5.30	5.75	6.15
8				4.55	5.05	5.50	6.00	6.50	7.00
9					6.50	7.10	7.75	8.40	9.00
10					8.25	8.90	9.70	10.40	11.15
12	0.0	5 5 5							

Wrought Nipples

Black Right and Left-Hand Nipples

			-				PRICE, I	EACH
Size		LEN	GTH, INCH				Close or	
In.	Close	Short		Lon	g		Short	Long
1/8	3/4	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3	3,	31/2	\$.05	\$.08
1/4	7/8	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3	3,	31/2	.05	.08
3/8	1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3	3,	$3\frac{1}{2}$.05	.08
1/2	$1\frac{1}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3	3,	$3\frac{1}{2}$.07	.10
3/4	$1\frac{3}{8}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	.08	.12
1	$1\frac{1}{2}$	2	$2\frac{1}{2}$,	3, 3	$3\frac{1}{2}$,	4	.11	.18
11/4	$1\frac{5}{8}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4	1,	41/2	.15	.23
$1\frac{1}{2}$	13/4	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$.18	.27
2	2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	41/2	.24	.36
$2\frac{1}{2}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4,	$4\frac{1}{2}$,	5	. 52	.79
3	$2^{5/8}$	3	$3\frac{1}{2}$	4,	$4\frac{1}{2}$,	5	.65	. 96
$3^{1/2}$	23/4	4	$4\frac{1}{2}$	5,	$5\frac{1}{2}$	6	1.00	1.40
4	$2\frac{7}{8}$	4	$4\frac{1}{2}$	5,	$5\frac{1}{2}$	6	1.15	1.60

Extra Long Black Right and Left-Hand Nipples

			I	PRICE. E	CH-			
_								
4	5	6	7	8	9	10	11	12
\$.09	\$.11	\$.13	\$.16	\$.18	\$.20	\$.23	\$ 25	\$ 27
.09	.11	. 13	.16	.18	. 20	. 23	. 25	.27
	.11	. 13	.16	. 18	. 20	. 23	. 25	.27
.11		.16	.18	. 21	. 24	. 27	. 29	.31
					. 27	. 29	.32	.35
					.37	. 41	. 45	.48
						. 55	. 60	. 65
							. 72	.80
	.43						. 96	1.03
							1.68	1.80
		1.13					2.10	2.27
							_	2 75
			2.00	2.25	2.50	2.75	3.00	3 25
	\$.09 .09 .09 .11	\$.09 \$.11 .09 .11 .11 .13 15 20 27 34 43	4 5 6 \$.09 \$.11 .13 .09 .11 .13 .09 .11 .13 .11 .13 .16 15 .17 20 .24 27 .32 34 .39 43 .51 91	4 5 6 7 \$.09 \$.11 \$.13 \$.16 .09 .11 .13 .16 .09 .11 .13 .16 .11 .13 .16 .1815 .17 .2320 .24 .3127 .32 .3934 .39 .4843 .51 .6791 1.20	## 5 6 7 8 \$.09	4 5 6 7 8 9 \$.09 \$.11 \$.13 \$.16 \$.18 \$.20 .09 .11 .13 .16 .18 .20 .11 .13 .16 .18 .21 .24 .15 .17 .23 .25 .27 .20 .24 .31 .33 .37 .27 .32 .39 .45 .50 .34 .39 .48 .52 .60 .43 .51 .67 .72 .80 .91 1.20 1.30 1.40 .113 1.44 1.60 1.77 .13 1.44 1.60 1.77 .15 .175 1.95 2.15	Length Inches	Length Inches

Add 60 per cent to above prices for galvanized right and left nipples.

Galvanized Right-Hand Nipples

Size		T.v	NGTH, INC	THE WOLL		Close or	LACH-
In.	Close	Short	Mari, INC	Long		Short	Long
1/8	3/4	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	31/2	\$.06	\$.11
1/4	7/8	11/2	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$.06	.11
3/8	1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$.06	.11
1/2	$1\frac{1}{8}$	11/2	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$.06	.11
3/4	$1\frac{3}{8}$	2	$2\frac{1}{2}$	$3, 3\frac{1}{2}$, 4	.08	.14
1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	$3, 3\frac{1}{2}$, 4	.11	.19
11/4	15/8	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$.17	.29
$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$.21	.35
2	2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$.27	.47
21/2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4, 41/2	, 5	.56	. 86
3	$2\frac{5}{8}$	3	$3\frac{1}{2}$	$4, 4\frac{1}{2}$, 5	. 70	1.10
$3\frac{1}{2}$	$2\frac{3}{4}$	4	$4\frac{1}{2}$	$5, 5\frac{1}{2}$, 6	1.20	1.70
4	27/8	4.	$4\frac{1}{2}$,	$5, 5\frac{1}{2}$, 6	1.35	1.87
41/2	$2\frac{7}{8}$	4	$4\frac{1}{2}$	$5, 5\frac{1}{2}$, 6	1.85	2 60
5	3	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6,	$6\frac{1}{2}$	2 30	3.15
6	$3\frac{1}{8}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6,	$6\frac{1}{2}$	2.80	4.25
7	$3\frac{1}{4}$	5	$5\frac{1}{2}$	6		4.25	4 95
8	$3\frac{1}{2}$	5	$5\frac{1}{2}$	6		5.00	5.80
		_		_			

Extra Long Galvanized Right-Hand Nipples

					PRICE, E.	ACH——	idiid i	iippie.	3
Size						CHES			
In.	4	5	6	7	8	9	10	11	12
1/8	\$.12	\$.15	\$.17	\$.21	\$.24	\$.26	\$.29	\$ 31	\$ 34
1/4 3/8	.12	.15	.17	.21	.24	.26	.29	.31	. 34
$\frac{3}{8}$.12	. 15	.17	. 21	. 24	. 26	. 29	.31	.34
$\frac{1}{2}$ $\frac{3}{4}$.13	. 16	.18	. 23	. 26	. 28	. 31	. 33	.3€
3/4		.18	. 21	.26	.29	.32	. 35	.38	. 41
1		. 24	.28	.34	.38	.42	.47	. 51	. 55
11/4		. 32	.38	.45	. 51	. 57	. 63	. 69	.75
$1\frac{1}{2}$. 39	.46	. 55	. 63	. 70	.77	. 84	. 91
2		. 52	. 61	. 74	. 83	. 93	1.03	1.13	1 23
$2\frac{1}{2}$			1.00	1.26	1.41	1.56	1.71	1.86	2 01
3			1.30	1.60	1.80	2.00	2.20	2.40	2 60
$3\frac{1}{2}$				2 10	2 35	2 60	2.85	3.15	3.40
1				2 30	2 60	2 90	3.20	3.50	3 80
11/2				3 30	3 65	4.05	4.45	4.85	5.25
5				3.75	4.20	4.60	5.00	5.40	5.85
,				4.50	5.00	5.55	6.05	6 60	7.15
7				5 65	6.35	7.05	7.75	8 45	9.20
3				6.65	7.50	8.35		10.10	10.95

Black Extra Heavy Wrought Nipples

		Ri	ght-Hand Nipples	_	
Size			ENGTH, INCHES	PRICE, EAC	H, BLACK
In.	Clos3	Short	Long-	Close or	
1/2	3/4		0 01/0 01/	Short	Long
12	11/2	$\frac{11}{2}$	$\frac{2}{3}$, $\frac{21}{2}$, $\frac{3}{3}$, $\frac{31}{2}$	\$.08	\$.12
74	1/8	1/2	$2, 2\frac{1}{2}, 3, 3\frac{1}{2}$.08	.12
3/8	1	$1\frac{1}{2}$	$2, 2\frac{1}{2}, 3, 3\frac{1}{2}$.08	.12
1/2	11/8	$1\frac{1}{2}$	$2, 2\frac{1}{2}, 3, 3\frac{1}{2}$.10	.14
3/4	13/8	2	01/ 0/2/ 01/2		
1	11/2	$\bar{2}$.12	.18
11/4	15/8			.16	.26
	128	$\frac{21}{2}$	$3, 3\frac{1}{2}, 4, 4\frac{1}{2}$.22	. 34
11/2	13/4	$2\frac{1}{2}$	$3, 3\frac{1}{2}, 4, 4\frac{1}{2}$.26	.40
2	2	$2\frac{1}{2}$	3 , 31/3, 4 , 41/3	.36	.54
21/2	$2\frac{1}{2}$	3	31/2, 4 , 41/2, 5	.78	
3	25%	3	917 4 117		1.18
31/2	93%	4		.96	1.44
4/2	272	4	$4\frac{1}{2}$, 5 , $5\frac{1}{2}$, 6	1.50	2.10
	2/8	4	$4\frac{1}{2}$, 5 , $5\frac{1}{2}$, 6	1.70	2.40
41/2	2/8	4	$4\frac{1}{2}$, 5 , $5\frac{1}{2}$, 6	2.50	3.40
5	3	$4\frac{1}{2}$	5 , $5\frac{1}{2}$, 6 , $6\frac{1}{2}$	3.10	4.90
6	$3\frac{1}{8}$	41/2	$5, 5\frac{1}{2}, 6, 6\frac{1}{2}$		
7	31/	5	51/2, 6	3.70	5.80
8	31%	5	F17 0	6.40	7.20
9	3.52		o½, 6	7.10	3.10
10	3 7%	5 5 5	* * * * * * * * * * * * * * * * * * * *	10.50	
12	4 1/8	5	** ** ** ** ** ** ** * * * * * * * * * *	13.50	
	-/2	0		16.00	

Extra Long Right-Hand Nipples

	_				-PRICE	EACH -			
Size					LENGTH	INCHES			
In.	4	5	6	7	8	9	10	11	12
8, 4	\$.14	\$.16	\$.20	\$.24	\$.28	\$.30	\$.34	\$.36	\$.38
3/8	.14	.16	.20	.24	.28	.30		.36	.38
1/2	.16	.20	.24	.28	.32	.36		.44	.46
3/4		. 22	.26	.34	.36	. 40	.44	.48	.52
1		.30	.36	.46	. 50	.56	.62	.68	
11/4		.40	.48	.58	.66	.72	.80	.88	.72
11/2		.50	.58	.72	.80	.90	1.00		.94
2		. 64	.76	1.00	1.08	1.18		1.08	1.18
$2\frac{1}{2}$			1.36	1.80	1.94		1.30	1.44	1.54
3			1.70	2.16		2.12	2.34	2.52	2.70
31/2	* * *		1.70		2.40	2.66	2.90	3.16	3.40
4	* * *	• • •		2.60	2.90	3.20	3.50	3.80	4.10
41/2		* * *		3.04	3.38	3.74	4.10	4.44	4.80
= 72	* * *	* * *		4.50	5.00	5.50	5.90	6.34	6.80
5		* * *	* * * *	5.16	5.66	6.20	6.70	7.20	7.70
6	* * *			6.10	6.70	7.40	8.00	8.60	9.30
7				8.10	8.90	9.80	10.60	11.50	12.30
8				9.10	10.10	11.00	12.00	13.00	14.00
9 10					13.00	14.20	15.50	16.80	18.00
12	* * *	* * *			16.50	17.80	19.40	20.80	22.30
					20.00	21.60	23.50	25.40	27.30

Hydraulic Wrought Nipples

Double list of extra heavy nipples.

Tank Nipples

Black



Size					-Pric	E, EACH				
	91/		-		-LENGT	н, Імсн	E3			
In.	$3\frac{1}{2}$	- 4	5	6	7	8	9	10	, 11	12
1/2	\$.07	\$.08	\$.10	\$.12	\$.14	\$.16	\$.18		\$.22	
3/4		.09	.11		.17	.18	.20	.22		
1										.26
1		. 13	.15	.18	. 23	.25	. 28	.31	.34	.36
11/4		17	00	0.4		-				
		.17	.20	.24	.29	.33	.36	.40	.44	.47
$1\frac{1}{2}$.20	.25	.29	.36	.40	.45	. 50	. 54	. 59
2			.32	.38	.50	.54	.59	.65		-
			.02	.00	. 30	104	.33	.00	.72	.77
21/2			.59	68	90	07	1 00	1 10		
3				. 00	.30	.31	1.00	1.17	1.26	1.35
		1	F + 4		1.08	1.20	1.33	1.45	1.58	1.70
$3\frac{1}{2}$					1.30	1.45	1.60	1.75	1 90	2 05
				. ,					1.00	2.03
4 5					1.52	1 60	1 97	2.05	2 22	9.40
5				*	4.02	0.00	1.01	2.00	4.44	2.40
6		*		5.4.4		2.83	3.10	3.35	3.60	3.85
0						3.35	3.70	4.00	4.30	4 65

Byers Genuine Wrought Iron Nipples Regular or Standard Weight

Assorted close and short nipples will always be shipped unless otherwise specified.

Assorted right and left nipples will be furnished "Long" unless otherwise specified.

Nipples, 2½ and 3-inch, Short can be furnished with 11½ threads per inch, at special prices.

Black—Right Hand Threads



		Black-	-Right Hand Thre	ads	A PAIOOS
Size		LE	GTH, INCHES	PRICE,	EACH
In.		Short	Long	or Short	Long
1/4 3/8	1/8	11/2	2, 2½, 3, 3½	\$.04	\$.06
1/2	11/	$\frac{11_{2}}{1!_{2}}$	2, 21/2, 3, 31/2	.04	.06
3/	13/	2 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$.05	.07
1 "	11%	2	01/ 9 01/ 4	.06	.09
11/4	15%	$\overline{2}\frac{1}{2}$	3, 3½, 4, 4½	.08 .11	.13
11/2	13/4	$2\frac{1}{2}$	3, 31/2, 4, 41/2	.13	.17
2	13/4	$2\frac{1}{2}$	3, 3½, 4, 4½	.18	.27
$2^{1/2}$	$\frac{21/2}{2}$	3	$3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5	.39	.59
3	21/2	3	$3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5	.48	.72
31/2 4	3	4	$4\frac{1}{2}$, 5, $5\frac{1}{2}$, 6	.75	1.05
41/	3	4	4 1/2, 5, 5 1/2, 6	.85	1.20
4 ¹ / ₂ 5	31/4	41/2	4½, 5, 5½, 6 5, 5½, 6, 6½	1.25	1.70
6	31/4	41/2	5, 5½, 6, 6½ 5, 5½, 6, 6½	1.55	2.45
7	$31/_{2}$	5	6	1.85 3.20	2.90
8	31/2	5	6	3.55	3.60
9	4	5	8	5.25	4.05 6.50
10	4	5	8	6.75	8.25
12	. 4	5	8	8.00	10.00
			PRICE, EACH		
CI?			EXTRA LONG		7

	0		-	0				5.00	10.00
					PRICE,	EACH-			
Size	_				– extra Lengua	LONG			
In.	4	5	6	7	8	, INCHES	10	11	10
1/4	\$.07	\$.08	\$.10	\$ 19	\$.14				12
3/8	.07	.08	. 10				\$.17	4	
12	.08			.12			. 17	.18	. 19
72	·Va	. 10	.12	.14	.16		20	.22	.23
3/4		. 11	. 13	.17	. 18	.20	.22		
1		. 15	. 18	.23	.25	.28	.31		
11/4		. 20	.24	.29	.33		.40		
11/2		. 25	.29	.36	.40			-	
2		.32	.38	.50	. 54		. 50		. 59
21/2			.68				. 65		.77
3 2		2 4 4		.90	.97		1.17	1.26	1.35
			.85	1.08	1.20	1.33	1.45	1.58	1.70
$3\frac{1}{2}$	* * *	8.76.16		1.30	1.45	1.60	1.75	1.90	2.05
4				1.52	1.69	1.87	2.05	2.22	2.40
$4^{1/2}$				2.25	2.50	2.75	2.95	3.17	
5				2.58		3.10	3.35		3.40
6				3.05		3.70		3.60	3.85
7				4.05			4.00	4.30	4.65
8			* + *		4.45	4.90	5.30	5.75	6.15
9				4.55	5.05	5.50	6.00	6.50	7.00
						7.10	7.75	8.40	9.00
10					,	8.90	9.70	10.40	11.15
12	0.0.0					10.80	11.75	12 70	12 65

	BI	ack—F	Right a	and L	eft Th	reads		10.00
Size Size Size	Close 7/8 1 1/8 1 1/2 1 1/2 1 1/2 1 1/2 2 1/2 2 3/4 3		2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	Long 2 1/2, 3, 2 1/2, 3, 3, 3, 3, 3, 4, 3, 1/2, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	31/31/3 33/3 33/4 44/3 44/5 55/5 66	Clo Si \$	PRICE, E se or dort . 05 . 05 . 07 . 08 . 11 1 1 1 5 . 18 2 4 . 24 6 5 . 00 1 5	Long \$.08 .08 .00 .12 .18 .27 .36 .79 .96 1.60
In.	4 5 \$.09 \$.11	6 \$.13	7 \$.16	NGTH, INC.	9	10	11	12
1/4 3/8 1/2 3/4	.09 .11	.13	.16	\$.18 .18	\$.20 .20	\$.23 .23	\$.25 .25	\$.27 .27
1 3/4	15	.16	.18	.21	.24	.27	.29	.31

In.	4	- 6		Tak	NGTH, IN				
					8	9	10	11	12
1/4	\$.09	\$.11	\$.13	3.16	\$.18	\$.20	\$.23	\$.25	\$.27
78	.09	.11	.13	. 16	.18	. 20	.23	. 25	
3/4	.11	.13	.16	.18	.21	.24	.27	.29	.27
- 74	* 4.9	.15	.17	. 23	. 25	.27	.29	.32	.31
1.		. 20	.24	.31	.33	.37	.41		. 35
11/4		. 27	.32	. 39	.45	.50	. 55	. 45	.48
11/2		. 34	.39	. 48	.52	. 60	. 67	. 60	. 65
2		. 43	.51	. 67	.72	.80	.87	.72	. 80
21/2			. 9.1	1.20	1.30	1.40		.96	1.03
3			1.13	1.44	1.60	1.77	1.55	1.68	1.80
31/2			1111	1.75	1.95	2.15	1.93	2.10	2.27
4			* * * *	2.00	2.25		2.35	2.55	2.75
					4 - 43	2.50	2.75	3 00	3 28

Cast Iron Water Pipe

Bell and Spigot and Turned and Bored



Standard Thickness and Weights of Cast Iron Pipe

		ss A	CI	ass B ndard	Cla	ass C m Heavy	Cla	Class D	
Nom I. D In.	100-F 43 LB Thick ness In.	T. HEAD s. PRESS. Wt. Lbs. per Ft.	200-I 86 LB Thick- ness In.	T. HEAD s. PRESS. Wt. Lbs. per Ft.	300-1	TT. HEAD BS. PRESS Wt. Lbs.	400-I	Lbs.	
3 4	. 38 . 42	13.9 20	$.42 \\ .45$	$15.4 \\ 21.7$.48	23.3	. 52	25	
6 8	. 44 . 46	$30.8 \\ 42.9$	$.48 \\ .51$	$\frac{33.3}{47.5}$. 51 . 56	$35.8 \\ 52.1$	$\begin{array}{c} .55 \\ .60 \end{array}$	38.3 55.8	
10 12	$50 \\ .54$	$57.1 \\ 72.5$	$\begin{array}{c} .57 \\ .62 \end{array}$	$63.8 \\ 82.1$	$\begin{array}{c} .62 \\ .68 \end{array}$	$70.8 \\ 91.7$. 68 . 75	$\begin{array}{c} 76.7 \\ 100 \end{array}$	
14 16	. 57 . 60	$\begin{array}{c} 89.6 \\ 108.3 \end{array}$	$\frac{.66}{.70}$	$\begin{array}{c} 102.5 \\ 125 \end{array}$	$\frac{.74}{.80}$	$116.7 \\ 143.8$. 82 . 89	$129.2 \\ 158.3$	
18 20	. 64 . 67	$129.2 \\ 150$	$.75 \\ .80$	$\begin{array}{c} 150 \\ 175 \end{array}$	$\substack{.87\\.92}$	$\begin{array}{c} 175 \\ 208.3 \end{array}$	$\frac{.96}{1.03}$	$191.7 \\ 229.2$	
24 30	. 76 . 88	$204.2 \\ 291.7$	$\substack{.89\\1.03}$	$233.3 \\ 333.3$	$\begin{array}{c} 1.04 \\ 1.20 \end{array}$	$\begin{array}{c} 279.2 \\ 400 \end{array}$	$\frac{1.16}{1.37}$	$\frac{306.7}{450}$	
36 42	$\begin{array}{c} .99 \\ 1.10 \end{array}$		$\frac{1.15}{1.28}$	$\begin{array}{c} 454.2 \\ 591.7 \end{array}$	$\frac{1.36}{1.54}$	$545.8 \\ 716.7$	$\begin{array}{c} 1.58 \\ 1.78 \end{array}$	$625 \\ 825$	
48 54	$\begin{array}{c} 1.26 \\ 1.35 \end{array}$	666.7 800	$1.42 \\ 1.55$	$750 \\ 933.3$	$\begin{array}{c} 1.71 \\ 1.90 \end{array}$	$908.3 \\ 1141.7$	$\substack{1.96\\2.23}$	$1050 \\ 1341.7$	
60 72	1.39 1.62	916.7 1283.4		$1104.2 \\ 1545.8$	$\frac{2}{2.39}$	$1341.7 \\ 1904.2$	2.38	1583.3	
		633.4 2					4 + 1 +		

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order only.

Inquiries and orders should clearly indicate the approximate number of lengths or feet of pipe of each size and class required. Give the desired delivery point and time of shipment, with any particulars as to sizes required first, the service intended, etc. This will facilitate prompt attention and avoid delays.

Two-inch pipe and fittings also furnished.

Approximate Weights of Lead and Hemp Required for Joints

Pipe In.	Wr., Lead	Les. Hemp	Pipe In.	Wr.,	Les. Hemp	Pipe In.	WT.,	LBS. Hemp
3 4	6. 7.5	.18 .21	16 18	30 33.8	1.94	48 54	$85.5 \\ 97.6$	4.37 6.25
6 8	$10.25 \\ 13.25$.31	20 24	37 44	$\substack{1.25\\1.50}$	60 72	$108.3 \\ 128$	$8.25 \\ 12.50$
10 12	16 19	$\begin{array}{c} .53 \\ .61 \end{array}$	30 36	$54.25 \\ 64.75$	2.06 3	84	147	15.00
14	22	.81	42	75.25	3.62			

Flanged



Flanged cast iron pipe, sizes 3 to 48 inches, same thickness as standard pipe. Thickness of flange equals approximately $1\frac{1}{2}$ times thickness of pipe, plus $\frac{1}{8}$ inch. Pipe made in 12-foot lengths and faced $\frac{1}{16}$ inch short for gaskets.

Specials for Cast Iron Pipe Class D

Size In. 4 6 8 10 12

	90° Qı	arter Bends	
Size	Wt.	Size	Wt.
In.	Lbs.	In.	Lbs.
4	82	16	750
6	130	18	888
8	200	20	1070
10	278	24	1656
12	366	30	2836
14	504	36	4820

45° Eighth Bends

			0.000		and to the		
4	66	12	265	20	964		
6	105	14	442	24	1515		
8	150	16	558	30	2291		
10	202	18	663	36	4012		
		221/2	· Sive	toonth	Bends		
		22/2	JIX	recurii	Della?		
4	66	10	202	16	484	24	1372
6	105	12	265	18	574	30	2080
8	150	14	382	20	858	36 /	4012

Tees



Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lb3.
4x 4x 4	128	10x10x 6	352	16x16x16	969
6x 6x 6	200	10x10x 4	338	16x16x12	861
6x 6x 4	183	12x12x12	512	20x20x20	1438
8x 8x 8	294	12x12x10	491	24x24x24	2113
8x 8x 6	270	12x12x 8	474	30x30x30	3660
8x 8x 4	255	12x12x 6	458	36x36x36	5567
$10 \times 10 \times 10$	395	12x12x 4	445	48x48x48	
$10 \times 10 \times 8$	371	14x14x14	724		

Crosses



Size, In.		Wt., Lbs.	Size,	In.		Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4x	4	166	10x10x	6x	6	406	16x16x16x16	1259
6x 6x 6x	6	257	$10 \times 10 \times$	4x	4	377	18x18x18x18	1454
6x 6x 4x	4	221	12x12x1	2x1	12	623	20x20x20x20	1828
8x 8x 8x	8	372	12x12x1	10x	10	577	24x24x24x24	2694
8x 8x 6x	6	325	12x12x	8x	8	545	30x30x30x30	4609
8x 8x 4x	4	294	12x12x	6x	6	512	36x36x36x36	6857
10x10x10x1	0	493	12x12x	4x	4	486	48x48x48x48	
10x10x 8x	8	443	14x14x1	14x	14	963		

	Plug			Cap		1		
	reig						Car	9
Size	WT.,	LBS.	Size	WT.,	LBS.	Size	WT.,	LBS.
In.	Plug	Cap	In.	Plug	Cap	In.	Plug	Cap
4	8	26	14	65	149	30	723	704
6	14	40	16	96	198	36	1050	1084
8	24	59	18	121	242	48	2047	2341
10	38	81	20	156	308	54	2733	3009
12	50	104	24	472	442	60	3397	3687
	Sleaves							

Size	Lgth.		Size	Lgth.	Wt.	Size	Lgth.	Wt.
In.	In.	Lbs.	In.	In.	Lbs.	In.	In.	Lbs.
4	15	61	14	18	280	30	24	1262
6	15	87	16	24	443	36	24	1772
8	15	119	18	24	518	48	24	2879
10	18	176	20	24	625	54	24	3571
12	18	223	24	24	821	60	24	4231

34

Special for Cast Iron Pipe



Class D							
Y Brar	ches						
Size	Wt.						
In.	Lbs.						
4x 4	103						
6x 6	181						
8x 8	291						
10x10	434						
12x12	632						
14×14	985						
16x16	1413						
18x18	1737						
20x20	2199						



Company of the	
Reducer	Increase



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
6x 4	97	12x 6	202	16x10	364	20x12	576
8x 6	143	12x 4	179	18x16	569	24x20	987
8x 4	119	14x12	360	18x14	502	24x18	901
10x 8	198	14×10	320	18x12	446	24×16	838
10x 6	169	14x 8	288	18x10	405	24x14	764
10x 4	146	14x 6	256	20x18	776	30x24	1398
12x10	261	16x14	461	20x16	711	36x30	2264
12x 8	231	16x12	405	20x14	638		
			Incre	easers			
4x 6	104	6x 8	150	8x10	201	12x14	378
4x 8	132	6x10	180	8x12	240		
4x10	162	6x12	218	10×12	267		
			C-114	T			

Split Tees

Wi	th any s	ize out	let.
Size	Wt.	Size	Wt.
In.	Lbs.	In.	Lbs.
3	60	14	293
4	103	16	355
6	115	18	400
8	165	20	460
10	245	24	563
12	275		





20

24

80

105

153

210

Split Sleeves



Size	Wt.	Size	Wt.
In.	Lbs.	In.	Lbs.
3	50	14	268
4	91	16	323
6	101	18	368
8	151	20	423
10	225	24	513
12	250		010

Flanges and Spigots



Size In. 3 4 6 8	Igth. In, 16 16 16 16	Wt, - Libs. 24 38 60 90	Size In. 10 12 14 16	Lgth. 1n. 18 18 18 20	Wt. Lbs. 140 173 220 255	Size In. 18 20 24	Leth. In. 20 20 24	Wt Lbs 340 425 635
Size	Lgth.	anges _{Wt.}	Size				Section 1	A
In. 3	In. 4	Lbs. 24	In. 14	In. 6	Lbs. 220			1 1
4	4	38	16	6	275			
6 8	4	60 90	18 20	6	$\frac{325}{395}$			
10	6	140	24	6	520	-		•
12	6	173						
		a.	****	F	lange	3	0.1	-
		Size In.	Wt. Lbs.	Size In.	Lt		Size In.	Wt. Lbs.
		3	10	10	4		1.9	117

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Specials for Cast Iron Pipe

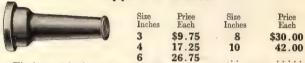


Tapped Elbows Price Each Inches \$9.75 17.25 \$29.50 10 36.00

				-0.00	
e hes	Tappo Price Each	ed Tees Size Inches	Price Each		1
	\$13.75 19.50 28.25	8	\$34.25 45.50		

Tapped tees are made 12-inch laying length, unless otherwise ordered.

Tapped Reducers



Fittings 6-inch and smaller tapped any size from 3/4 to 2-inch; 8-inch and larger tapped any size from 3/4 to 3-inch. In ordering, state size of tapping desired.

Base Elbows with Bell Ends

Size	Wt.	Size	Wt.	Size	Wt.
In.	Lbs.	In.	Lbs.	In.	Lbs.
3	93	12	572	24	2375
4	125	14	742	30	4067
6	191	16	1062	36	6679
8	300	18	1266		
10	413	20	1550		
P	rices up	on app	lication.		



Tapped Couplings Used to connect wrought iron with cast iron

pipe	of same	e size.			
Size	Lgth.	Price	Size	Lgth. In,	Price
In.	In.	Each \$7.25	In.	In.	Each
4	71/4	7.50	10	78/	\$14.00 18.50
6	714	10.25	12	8	21.75

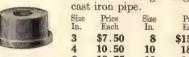
Tapped Plugs For connecting wrought iron pipe to larger

cast	iron pipe				Ü	
Size	Price	Size	Price	Size	Price	
In.	Each	In.	Each	In.	Each	
3	\$5.50	8	\$10.25	14	\$24.00	
4	6.00	10	12.00	16	30.25	
6	7 25	12	13 50		_	

Tapped 2 inches and smaller. Plugs tapped larger than 2 inches, extra net as follows: 2½-inch, \$2.00; 3-inch, \$3.00; 4-inch, \$4.00; 5-inch, \$5.00; 6-inch, \$6.00.

Tapped Caps

For connecting wrought iron pipe to larger



CE	ast iron pip	e.			
Si		Size In.	Price Each	Size In.	Price Each
3	\$7.50	8	\$15.00	14	\$27.00
4	10.50	10	18.75	16	38.50
6	13.75	12	24 75		

Tapped 2 inches and smaller. Plugs tapped larger than 2 inches, extra net as follows: 2½-inch, \$2.00; 3-inch, \$3.00; 4-inch, \$4.00; 5-inch, \$5.00; 6-inch, \$6.00.

Saddles

	-	addies
For C. I. Pipe, In.	Tapped for	Price
	Pipe, In.	Each
3	3/4 to 2	\$6.75
4	34 " 2	9.40
6	3/4 " 2	10.00
6	3	12.20
8	3/4 to 2	15.20
8	3	15.20
10	3/4 to 2	15.50
10	3	15.50
12	4 or less	18.20
14	4 " "	21.50



Malleable Iron Fittings

Revised Classification and Price List

Effective July 5, 1927

Bai	nded		
Class Price, Blackper lb. "Galv"	A \$.65 .75	8 \$.30 .36	C \$.21 .26
Caps Couplings, R. H. Plain R. H. Banded R. H. R. & L. Crosses, Straight	18	1 to 3 to	1½ to 6 1 1½ to 4 1 " 2 1½ " 6
Reducing Elbows, Straight	1	$\begin{cases} \frac{1}{2}, \frac{3}{4} \text{ and } \\ 1, 1\frac{1}{4}x\frac{1}{2} \\ \frac{1}{4}, \frac{3}{8}, \frac{1}{2} \\ \frac{3}{8}x\frac{1}{4} \text{ to } \\ 1x\frac{1}{2}, 1\frac{1}{4}x\frac{1}{2} \end{cases}$	1¼ " 4 ½ " 6 1x¾ " 4x3
" R. & L	1, 30, 12 14, 10, 140 140 140 140 140 140	3 to 2 1	2½ to 6 1 " 4
Return Bends, C. P.	* * * * *	$\frac{8 x_4}{1_2^4 x_2^4}, \frac{1_4^2 x_2^4}{2 x_3^4}$	$4x3\frac{1}{2}$
" " M. P O. P	· · · · · · · · · · · · · · · · · · ·	12, 3, 1 12, 3, 1 12, 3, 1 12, 3, 1 14, 3, 12 14 to 3 (1)	12, 12, 2 14, 12, 2 14 to 3 3 " 6
" Reducing	{	$\begin{cases} 1 & 2 & \frac{3}{4} \\ \text{Outlet } \frac{1}{2} - \text{in.} \\ \text{and Smaller} \\ & \frac{3}{8}, \frac{3}{4} \end{cases}$	in. and Larger $2\frac{1}{2}$ to 6 All Sizes
" Service, Straight Reducing		$\begin{cases} \frac{1}{2}, \frac{3}{4} \\ 1x_{\frac{3}{4}} \\ \frac{1}{2}, \text{ to } 4 \end{cases}$	$1\frac{1}{2}, 2$ $1\frac{1}{4}, 1\frac{1}{2}, 2$

	Plain		
Class Price, Blackper "Galv"	lb. \$.65	B \$.34 .41	\$.24 .30
Chandeller Hooks, Male.	* 1	1 to 1 1 and 1	11 to 2
Loops, Male		8 4 1 8 3 8 3 8	
Elbows, Reducing	EAR	1½ and 2	
" Side Outlet Drop, Female		3 to 2	* * * * * * *
" Long Drop " " " Extension Pieces		3 and 1 2 3 to 2	* * * * * * *
Reducers	\$X\$	*******	*****
Tees, Reducing "Drop, Female	$\frac{3}{8}X_{8}^{1}$	All Sizes	
" Male and Female " Four-way		3 to 2 3 and 1	
Waste Nuts		$\frac{1}{4}$ to 2 $\int 2x1\frac{1}{2}x1\frac{1}{2}$	
Y's		$2x1\frac{1}{2}x2$ $2x1\frac{1}{2}$	

All fittings other than Standard take 25 per cent advance. Such fittings in Class C as have one or more openings smaller than ¾-inch to be Class B.

For reducing malleable fittings, the smallest opening determines the classification.

The run of tees gives the sizes for the purpose of classification; the outlet being larger does not change it.

Right and left fittings not classified take one class higher than right hand.

than right hand.

Malleable Iron Fittings

Approximate Weight of Black Malleable Iron Fittings Weight in Pounds per 100 Pieces

Size				bows -		Side		rop
In. 1/8	Plain 7	Beade	ed St	reet	45°	Outlet	Fem.	M. and F.
1/4	9	i		10	11		15	
$\frac{3}{8}$ $\frac{1}{2}$	$\frac{14}{22}$	20		$\begin{array}{c} 15 \\ 24 \end{array}$	$\begin{array}{c} 17 \\ 23 \end{array}$	$\frac{19}{27}$	18 27	23 35
3/4	37	4		37	35	48	51	00
1	51	5'	7	60	53	72		
$\frac{11/4}{11/2}$	$\frac{90}{120}$	$109 \\ 128$		$\frac{92}{28}$	$\begin{array}{c} 87 \\ 112 \end{array}$	$\frac{120}{164}$	• •	• •
2	192	220	0 2	808	197	265		
21/2	4 = 4	338 520		42 95	$\frac{305}{445}$			• •
31/2		720	0		610			
4		913		95	800			
4½ 5		1360 1430		# 19 * -	$1030 \\ 1340$	• • •		• •
6	* * *	234			2100			
Size		т	ecs			op Tees	Cro	
In. 1/2	Plain 8	Beaded	Servic	e 4-wa		M. and F.	Plain	Beaded
1/8 1/4	12	15					16	
$\frac{3}{8}$ $\frac{1}{2}$	20 30	23 35	23 32	28 36		18 22	23 36	28 42
3/4	48	55	53	55	52	33	56	69
1 11/4	$\begin{array}{c} 70 \\ 116 \end{array}$	$\begin{array}{c} 81 \\ 152 \end{array}$	78 134	88 142		52	$\begin{array}{c} 78 \\ 142 \end{array}$	94 160
11/2	158	183	168	182		• •	179	203
2	265	300	300	305			307	345
21/2	* * *	463 665	494 700	* * * *	* *	* *		$\frac{530}{730}$
31/2		960		• • •				1070
4 4 1/2		$\frac{1210}{1730}$			* *			1340
5		2090						2360
6	• • •	3260		* * *	* *	• •	* * *	3510
Size	Y	″s	С	aps	Re	ducers	Cross-	Wash
In. 1/4	Plain	Beaded	Plain 5	Beade	d Plair	Beaded	overs	Tees
3/8			7		. 9			
$\frac{1}{2}$		45 64	$\frac{12}{20}$		$\frac{16}{20}$	27	48 84	52 75
1		108	32		33	41	115	
11/4	$\frac{170}{240}$	188 257		54 78		60		
$\frac{11/2}{2}$	392	395		122		$\begin{array}{c} 87 \\ 146 \end{array}$		• •
$2\frac{1}{2}$	458	650		196		260		
$\frac{3}{31/2}$		1040	.* *	285 390		400 555		• •
4		1750		445		711		
41/2				730				
5 6			* * .	1070				• •
					Couplin	as		
Size In.	C. P.	urn Bend Med.		Beaded R. and L	Plain	Beaded R. H.	Lock Nuts	Off- sets
1/4	* * +			9	7 11	8	31/2	
3/8 1/2 3/4	38	40	42	18	15	13 17	4 ³ ⁄ ₄	
	60	61	80	29	24	29	11	71
1 11/4	$\frac{90}{142}$	95 155	$\frac{115}{192}$	45 77	36 63	$\begin{array}{c} 43 \\ 72 \end{array}$	16 24	$\begin{array}{c} 128 \\ 195 \end{array}$
11/2	184	212	300	98	85	. 96	34	
214	300	366	456	168	143	164	50	
$\frac{21/2}{3}$	* * *		700	250 335	* * *	242		

1020

335

333

Malleable Iron Screwed Fittings Straight and Reducing Elbows Plain and Banded





	at cells	and the	A
A			

•	
Band	de

							-		
Size In	Right Block	HAND Galv.	R. AN Black		Size In.	RIGHT	PRICE, HAND Galv.		AND L. Galv.
1/8	\$ 06 .07	\$.08 .09	\$.09	\$.12	2 21/2	\$.50	\$.90 1.50	\$.65	
3/8 1/2/ 3/4	7.10	.11	.11	.16	31/2	1.50 2.25	2.60 3.75		
1	.15	.20	.17 .25	.23	4 41/2	3.00	5.00 5.75		
11/4	.25	.40	.30	. 45 . 65	5	4.00 6.50	6.50		
1.									

45° Elbows—Plain and Banded

	Size In.	PRICE, Black		Sine		EACH
	Lil.		Galv.	In.	Black	Galv.
	1/4	\$.08	\$.12	$2^{1/2}$	\$1.25	\$1.90
	3/8	.10	.15	3	2.50	3.75
	1/2	.12	.20	$31/_{2}$	3.25	4.75
	3/4	.18	.25	4	4.50	6.75
	1	.26	.40	41/2	5.25	7.75
The state of the s	11/4	.36	.50	5	6.00	9.00
	11/2	.54	.85	6	7.50	11.00
	2	.82	1235	•		

60° Elbows-Plain and Banded

Size	PRICE,		Size	PRICE,	
ln.	Black	Galv.	In.	Black	Galv.
11/4	\$.30	\$.45	2	\$.65	\$1.05
11/2	.45	.70		7.00	44.00

Banded

		JLI	eet i	FIDOA	VSE	5
Size In.	PRICE, I	EACH	Size In.	PRICE, Black	EACH Galv.	
1/2		\$.10				
1%	.10	.12	$\frac{2}{2^{1/2}}$		\$1.30	
3/2	.10	.12	3	1.50	2.25	
1/8	.12	.15	31/2	2.25 2.85	3.50 4.65	
3%	.20	.28	4	3.50	5.75	
1 1	.25	.35	5	4.75	7.50	
11/4	.40	.55	6	7.75		
11/2	.55	.80			11.50	
- / -		1				



45° Street Elbows-Banded

	Size In.	PRICE, Black	Galv.	Size In.	PRICE, Black	Galv.
	3/8 1/2	\$.12 .12 .12	\$.15 .15 .15	$\frac{11/4}{11/2}$	\$.40 .55 .90	\$.55 .80 1.30
The same of	1 3/4	.20	.28	3	2.25	3.50 5.75

Side Outlet Elbows-Plain

			/	
Size	Parce	EAGH	-	
In.	Black	Galv.		W. F
3/8		\$ 10		
1/2	\$.08	.15		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3%	.18	.25	A Section 1	
1 14	30	45		
11/4	.30 .45	.45	rities .	
11/2	.60	.65		A Daniel
272		.90		
4	1.00	1.50		

In ordering, state whether black or galvanized fittings are wanted.

Malleable Iron Screwed Fittings Female Drop Elbows-Plain



Male and Female Drop Elbows-Plain

Size In. 3/8 1/2	Black \$.08	Galv. \$.12 .20	
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Straight and Reducing Tees Plain and Banded







Banded, Straight

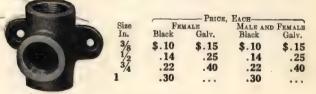
	Sise In.	PRICE, Black	EACH Galv.	Size In.	PRICE Black	EACH Galv.
A	1/8	\$.07 .08	\$.09	2 2½	\$.60 1.05	\$1.00
	3/8	.09	.13	3 ¹ / ₂	1.70	3.00 4.25
	1 3/4	.15	.20	41/2	3.40 4.25	5.75
Banded, Reducing	11/4	.30	.50	5 6	5.00	8.00

Right and left tees furnished to order. State which hole is to be tapped left hand.

Four-way Tees-Plain

ie L.	Black PRICE,	EACH-Galv.	
8	\$.12	\$.17	Andrew
/8 /2 /4	.14	\$.17 .20	
4	.20	.28	
6	.35	. 50 . 70	V. M.
2	.80	1.10	
~	1.25	1.75	
The state of the s			

Drop Tees-Plain



Long Drop Tees-Plain

	Drop Lgth	. Black	Galv.		Drop Lath.	Black
Sîze	Over All	Price	Price	Sise	Over All	Price
Inches	Inches	Each	Each	Inches	Inches	Each
3/8 3/4×3/4×1/2	$2\frac{1}{2}$	\$.12	\$.17	1x1x1/2	33/8	\$.40
3/43/41/	31/8	.30	4.2.		334	
74474472	. 078	. 30		$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{2}$	3%	. 60

In ordering, state whether black or galvanized fittings are wanted.

Malleable Iron Screwed Fittings

S	ervic	e Te	es-l	3 and	ed
Size	PRICE, H	ACH	Size	PRICE,	EACE

	PRICE,			PRICE	LACH
In.	Black	Galv.	In.	Black	Galv.
1/4	\$.12	\$.15	11/2	\$.75	\$1.00
3/8	.12	.15	2	1.15	1.65
1/2	.15	.20		2.00	
3/4	.25	.35	3		
1	.35	. 50	3x21/2x3	2.50	
1/4	.50	. 70	3x3 x4	4.00	

Straight and Reducing Crosses Plain and Banded

Size In.	PRICE, Black	EACH Galv.	Size In.	PRICE, Black	EACH Galv.
1/8	\$.08	\$.11	2	\$1.00	\$1.50
1/4 3/8	.10	.12	$\frac{21/2}{3}$	1.75 3.00	2.75 4.50
3/4	.16	. 25	$\frac{31/_{2}}{4}$	3.25 5.25	5.25 8.00
1 11/4	.30	. 45	5 6	7.50 13.00	11.00 19.00
$1\frac{1}{2}$.60	.90			



Straight and Reducing Y Branches Plain and Banded

Size. In.	PRICE, Black	EACH Galv.	Size In.	PRICE, Black	EACH Galv.
3/8	\$.35	\$.50	11/2	\$1.00	\$1.50
1/2	.40	. 60	2	1.70	2.50
3/4	. 50	.75	$2\frac{1}{2}$	2.00	3.00
1	. 60	.90	3	4.00	6.00
11/4	.80	1.25	4	5.50	8.25

Right and Left-hand Couplings Ribbed

Size- In.	PRICE, Black	EACH Galv.	Size In.	PRICE, Black	Each Galv.
1/4	\$.04	\$.06	11/4	\$.25	\$.35
1/2	.06	.09	2	. 36 . 52	. 55 . 75
13/4	.12	.17	$\frac{2^{1/2}}{3}$.70 1.00	1.05
-			-	2.00	2.00



Right-hand Couplings-Plain and Banded

Size In.	Price, Black	Galv.	Size ·	PRICE, Black	Galv.	Size In,	Price Black	Galv.
1/4 3/8 1/2 3/4	\$.03 .05	\$.05 .07	1 11/4	\$.14	\$.23 .30	$\frac{2^{1/2}}{3}$	\$.60 .90	\$.95 1.40
1/2	.07	.10	11/2	.25	. 40	31/2	1.25	1.90
7/4	. 10	.17	2	. 35	.55	4	1.75	2.75

Reducing Couplings—Plain and Banded

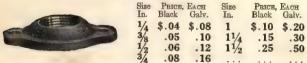
Size In.	PRICE, Black	EACH Galv.	Size	PRICE,	EACH
1/.	\$.05	\$.08	In. 1½	Black \$.28	Galv.
3/2	.06	.10	2 2	.45	\$.45 .75
1/2	.07	.10	21/2	.70	1.05
3/4	.10	.15	3	1.00	1.65
1	.16	.25	$3\frac{1}{2}$	1.50	2.40
11/4	. 20	. 35	4	1.85	3 05

Caps-Plain and Banded

Size In.	Price, Black	Each Galv.	Size In.	PRICE, Black	Each Galv.	
1/8	\$.03 .03	\$.04 .04	2 21/2	\$.32 .45	\$.52 .76	1
3/8	.04	.05	31/2	.85	1.30 1.60	-
3/4	.08	.12	4	1.20	2.00	-
11/4	.16	.17	5 . 6	2.50 3.50	3.50 5.00	1
11/2	.24	. 38				



Waste Nuts



In ordering state whether black or galvanized fittings are wanted.

Malleable Iron Screwed Fittings Shoulder Bushings



Size Inches	PRICE Black	Galv.	Size Inches	PRICE, Black	EACH Galv,
1/4 3/8	\$.04 .04	\$.08	11/4	\$.07	\$.14
1/2	.04	.08 .08	2	.09	.18 .28
1 3/4	.05	.19	21/2	.21	.42

Faced Bushings

Size Inches	Price, Black	Each Galv.	Size Inches	PRICE, Black	EACH Galv.	
3/8	\$.08	\$.12	$3\frac{1}{2}$	\$1.20	\$1.80	
1/2	.09	.14	4	1.50	2.25	
3/4	.11	.17	$4\frac{1}{2}$	2.10	3.15	
1	. 13	. 20	5	2.60	3.90	
$1\frac{1}{4}$.17	. 25	6	3.75	5.60	
$1\frac{1}{2}$.22	.33	7	8.00		
2	.32	.48	8	9.00		
$2\frac{1}{2}$.48	.72	10	14.00		
3	.70	1.05	12	20.00		



Locknuts



Inches	Black	Galv.	Inches	Black	Galv.
1/0	\$.02	Citie	1	\$.07	\$.10
1/4	.02	\$.03	11/4	.09	.14
3/8	.03	.04	11/2	.11	.20
1/2	.04	.05	2	.18	.39
3/4	.05	.07			

Extension Pieces

se Johen	Black	PRICE, EACH Galv.	
3/8 1/2	\$.06 .09	\$.09 .13	
3/4	.12	.18	
1/4	.15	.23	
2/2	.30 .50	.45	



Hexagon Nipples



Regularly furnished right and lefthand. Right-hand at special prices.

Cross Overs-Banded

Size	PRICE,	EACH
Inches	Black	Galv.
1/2	\$.20	\$.25
3/4	.30	.40
1	.45	. 60



Cross Over Tees-Banded



Offsets—Banded

Size Inches	Offset Inches	Length Inches	Price Each
3/4	11/2	$3\frac{1}{4}$	\$.25
1	$1\frac{1}{2}$	4	.40
11/4	2	53/8	.75



In ordering, state whether black or galvanized fittings are wanted.

Malleable Iron Screwed Fittings Close Pattern Return Bends



Will not make up parallel coils, as distance, center to center, of two adjacent bends is greater than center to center distances between openings of a single bend.

				PRICE, EACH-		
Size	Center to Center	Riom	HAND	Ri	GHT	Left
Inches	Inches	Black	Galv.	Black	Galv.	Hand Black
1/2	1	\$.18	\$.25	\$.23	\$.35	\$.23
3/4	11/4	.25	. 35	. 30	.40	.30
11/4	13/2	. 35	. 55	.45	. 65	.45
-47	232	. 50 . 75	.75	. 60	.85	. 60
2 2	25/8	1.00	1.15 1.65	.90	1.30	.90
-	2/8	1.00	1.00	1.25	1.90	1.25

Medium Pattern Return Bends



				-PRICE, EACH-		
Size	Center to Center	D		Ri	GHT	Left
			r Hand	AND	LEFT	Hand
Inches	Inches	Black	Galv.	Black	Galv.	Black
1/2	$1\frac{1}{4}$	\$.18	\$.25	\$.23		\$.23
3/4	$1\frac{1}{2}$.25	.35	.30	\$.40	.30
1	17/8	.35	. 55	. 45	. 65	.45
11/4	$\frac{21}{4}$. 50	.75	. 60		. 60
11/2	$2\frac{1}{2}$.75	1.15	.90		.90
2	3	1.00	1.65	1.25		1.25

Open Pattern Return Bends



	_			PRICE, EACH-		
Size	Center to Center	D	. TT	Ric	HT	Left
Inches			HAND .		LEFT	Hand
	Inches	Black	Galv.	Black	Galv.	Black
$\frac{1}{2}$ $\frac{3}{4}$	11/2	\$.20	\$.28	\$.25		\$.25
3/4	2	. 30	. 45	.38	\$.55	.38
1	$2\frac{1}{2}$. 50	.70	. 60	.80	.60
11/4	3	. 65	.90	. 80	1.05	. 80
11/2	$3\frac{1}{2}$.85	1.25	1.05	1.50	1.05
2	4	1.25	2.00	1.55	2.40	1.55
$2^{1/2}$	$4\frac{1}{2}$	2.00	3.50	2.50		2.50
3	5	3.00	5.00	3.75		3.75

Special Wide Pattern Return Bends



Size Inches	Center to Center Inches		HAND EACH Galv.	Size Inches	Center to Center Inches	Right Price, Black	
3/8 3/4 3/4	$1\frac{1}{2}$	\$.25	\$.30	2	5	\$3.00	\$4.00
3/4	4	1.00	1.35	2	6	4.00	5.00
3/4	6	1.25	1.65	3	71/2	5.00	6.50
1	6	1.25	1.70	3	8	5.00	6.50
11/4	6 -	1.25	1.70	4	6	8.00	
11/2	6	2.00	2.75	6	12	16.00	

Prices of return bends for medium and extra heavy service upon application. In ordering, state whether black or galvanized fittings are wanted.

Malleable Iron Male Union Elbows



Malleable Iron Female Union Elbows

Size Inches 1/4 3/8	PRICE, Black \$.38 .40	Each Galv. \$.57	Size Inches 11/4 11/2	PRICE Black \$.90 1.05	Galv. \$1.35	
1/2 3/4 1	.42 .54 .63	.63 .81 .95	2 2½	1.55 2.85	2.35 4.30	

Malleable Iron Male Union Tees

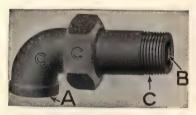


Malleable Iron Female Union Tees

Size In. 1/4 3/8	PRICE, Black \$.40 .43	Galv. \$.60	Size In. 11/4 11/2	\$.95	EACH Galv. \$1.45	The state of the s
$\frac{1}{2}$ $\frac{3}{4}$.45 .57		2 2 ¹ / ₂	1.70 3.20	2.55 4.80	4
1	.70	1.05				

Circulating Boiler Fittings

Malleable Iron-Galvanized



No. 586, Boiler Elbow With Union



No. 587, Boiler Elbow



No. 588, Boiler Coupling



No. 589, Boiler Coupling With Union

Size Inches A B C 3/4×3/4×1 3/4×1/2×1 1/2×1/2×1	Boiler Elbows \$.40 .40	GALVANIZED, Boiler Elbows with Union \$.75 .75	PRICE, EACH————————————————————————————————————	Boiler Coupling with Union \$.75 .75
72×72×1	.40	. 60	. 40	. 60

Hydraulic Malleable Iron Screwed Fittings

90° Elbows Size Inches Price Each Size Inches Price Each \$.20 \$.70 11/2 \$6.50 5 .25 .90 9.50 .30 21/2 1.50 21.00 .35 3 37.00 2.40 10 3.25 .40 12 60.00

	45° E	lbows		
Size Inches	Price Each	Size Inches	Price Each	
1/4	\$.25	2	\$1.10	
3/8	.30	21/2	1.85	
1/2	.35	3	2.85	
3/4	.42	31/2	4.00	
11/	.50	4	5.00	
11/4	.65	5	7.50	
1 1/2	.85	6	10.50	



Long Turn Elbows

Sise Inches	Price Each	Size Inches	Price Each
1	\$.64	3	\$4.50
11/4	.80	31/2	6.50
11/2	1.10	4	7.00
2	1.60	5	13.00
21/2	2.40	6	17.50

-		7	ees		
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
3/2	\$.30 .40	$\frac{11/_{2}}{2}$	\$1.05 1.35	5	\$9.75 14.25
3/8 1/2 3/4	.45	21/2	2.25	8	32.00
1 3/4	. 50 . 60	$\frac{3}{3\frac{1}{2}}$	3.60 5.00	10 12	55.00 90.00
11/4	.80	4	6.50		



	Couplings							
The same	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each		
	1/4 3/8	\$.20 .25	$\frac{11/4}{11/2}$	\$.55 .70	3½ 4	\$3.25 4.25		
	3/8 1/2	.30	2	.90	5	6.50		
	3/4	.35	21/2	1.50	6	9.50		
	1	.40	3	2.40				

Crosses							
Size Inches	Price Each	Size Inches	Price Each	and the same			
1/4	\$.60		\$2.70				
3/8 1/2	.80 .90	2 2 ¹ / ₂ 3	4.50 7.20				
3/4	1.00	$3\frac{1}{2}$	10.00				
11/4	1.20 1.60	4 5	13.00 19.50				
11/2	2.10	6	28.50				



Reducers

Size Inches	Price Each	Size Inches	Price Each	Sise Inches	Price Each	Size Inches	Price Each
3/4	\$.30	$\frac{11/4}{11/2}$	\$.45	2	\$.70	3	\$2.25
A.	.40	1 1/2	. 55	21/2	1.30	* 4	

Fittings are Recommended for the Following Hydraulic Working Pressures

Size	Pressure		Pressure	Size	Pressure
Inches	Pounds	Inches	Pounds	Inches	Pounds
1 and Smaller	2000	21/2to 4	1000	8	600
11/4 to 2	1500	5 and 6	800	10 and 12	500
Long turn	elbows, 45°	elbows and	crosse	s, reducing	sizes.

are made to order by bushing in the sand from straight patterns, at a special price.

Reducing fittings carried in stock furnished at same price as

straight sizes.

For galvanizing, add 50 per cent to above lists.

Standard Malleable Iron Unions

For 150 Pounds Steam Working Pressure



Size In.	PRICE, Black	Each Galv.	Size In.	PRICE, Black	Each Galv.	Size In.	Price Black	, Each Galv.
1/8	\$.18 .18	\$.27 .27	1 11/4	\$.33 .46	\$.50 .70	3 31/2	\$2.10 3.65	\$3.15 5.50
3/8	.20	.30	$1\frac{1}{2}$.58	.90	4	4.35	6.50
$\frac{1}{2}$ $\frac{3}{4}$.22 .27	.33	$\frac{2}{2^{1/2}}$.75 1.55	1.15 2.35			



Star Malleable

For 300 Pounds Working Pressure

This union is made of malleable iron and has a ground joint.

The seat is made of bronze.

Size	PRICE,	EACH	Size	PRICE	, EACH
Inches	Plain	Galvanized	Inches	Plain	Galvanised
1/4	\$.30	\$.45	11/4	\$1.20	\$1.80
3/8	. 40	. 60	11/2	1.60	2.40
1/2	. 50	. 75	2	2.00	3.00
3/4	.60	.90	21/2	3.20	4.80
1	.80	1.20	3	4.80	6.20

New Walworth Kewanee Unions



3-inch and Smaller, 250 Pounds Steam Working Pressure; 3½-inch and Larger, 200 Pounds

Has patented combination manganese bronze to steel ball joint, up to 3 inches, inclusive; brass to iron ball joint, 3½ and 4 inches, with non-corrosive thread connection. Each union tested with extreme compressed air pressure under water. No gasket required.

Sise		, EACH	Size		EACH	Size	PRICE,	Еасн
In.	Black	Galv.	In.	Black	Galv.	In.	Black	Galv.
1/8	\$.30	\$.45	1	\$.80	\$1.20	3	\$4.80	\$7.20
1/8 1/4 3/8 1/2 3/4	. 30	.45	11/4	1.20	1.80	$3\frac{1}{2}$	6.50	9.75
3/8	.40	.60	11/2	1.60	2.40	4	10.00	15.00
1/2	. 50	.75	2	2.00	3.00			
3/4	60	. 90	21/2	3.20	4.80			

H-P-M Forgsteel Hex Screwed Unions

Rated for 5000 pounds working pressure and tested at 12000 pounds hydrostatic pressure. There are no inserted seats to work loose.

Furnished either solid steel to steel or one end of solid steel and the other of solid stainless steel. In the latter case the beveled end that screws into the hex nut is of stainless steel.

The joint may readily be broken and reassembled—always tight.

Size Inches	Steel to Steel	Steel to Stainless Steel	Size Inches	Steel to Steel	Steel to Stainless Steel
1/4	\$1.70	\$2.00	1	\$3.80	\$5.50
3/8	1.90	2.30	11/4	5.60	****
1/2	2.30	2.90	11/2	7.50	* * * *
3/4	2.80	4.50	• • •		* * * *



Plain Pattern Malleable Iron Railing **Fittings** No. 61 Elbows

	Size	PRICE, PE	R POUND-
10000	· Inches	Black	Galvanized
R.H	3/4	\$.12	\$.19
N.H	• 1	.12	. 19
	11/4	.12	. 19
	$1\frac{1}{2}$.12	. 19
A control of	2	.12	.19
R.H.	$2\frac{1}{2}$.12	.19
	3	.12	. 19

No. 62 Side Outlet Elbows

Size Inches	Black	, PER POUND————————————————————————————————————	
3/4	\$.20	\$.28	
111/4	.20 .20	.28 .28 в.н.	R.H.
1 1/2	.20	.28	
$\frac{2}{2}\frac{1}{2}$.20	.28 .28	
3	.20	.28	R.H.

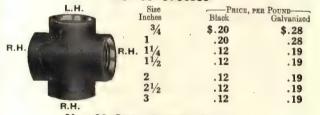
No. 63 Tees



No. 64 Side Outlet Tees

			L.H.
Size Inches	Black PRICE,	PER Pound————————————————————————————————————	
3/4	\$.20	\$.28	10
11/4	. 20 . 20	.28	R.H.
$\frac{1}{2}^{1/2}$.20	.28 H.H	- N. S. J. V.
21/2	. 20 . 20	.28	
3	.20	.28	R.H.

No. 65 Crosses



No. 66 Side Outlet Crosses

			RH.
Size .	PRICE, P	ER POUND	
Inches	Black	Galvanized	* Application of the Control of the
3/4	\$.20	\$.28	
1	. 20	.28	
$1\frac{1}{4}$. 20	.28 R.H	R.H.
$1\frac{1}{2}$. 20	. 28	
2	. 20	.28	
21/2	.20	.28	R.H.
2 2 ¹ / ₂ 3	.20	.28	R.H.

Fittings larger than 2-inch are made to order only.

Fittings are furnished tapped as shown, or right hand on all senings when so specified, at regular price. Tapped otheropenings when so specified, at regular price.

wise will be charged at 15 per cent additional price.

Reducing sizes are made to order at a special price and unless otherwise specified will be tapped same as straight fittings as above.

Fittings are reamed for slip joints when so specified at an additional price. Inquiries and orders should be accompanied by sketches showing clearly which openings are to be so reamed.

Malleable Iron Railing Fittings

		No. 1	Elbows	
	Size Inches	Price Each	Size Inches	Price Each
ent.	1/2	\$.15	11/2	\$.45
VI 7	3/4	.18	2	. 72
	1	.20	21/2	1.60
	11/4	.35	3	2.25

No. 2 Side Outlet Elbows

Size Inches	Price Each	Size Inches	Price Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.20 .23	$\frac{11}{2}$	\$.50 .80
1 11/4	.25	2½ 3	1.75
- /4	. 10	3	2.30



\$.50

1.75

.75

No. 3 Tees Price Each \$.20 .23 .25 11/4 .40

140.	4 Side	Outlet	i ees
Size	Price	Size	Price
Inches	Each	Inches	Each
1/2	\$.30	11/2	\$.55
3/4	. 33	2	. 90
1	. 35	$2^{1/2}$	1.90
11/4	. 45	3	2.60



Size Inches 11/2

 $2^{1/2}$

174	. 40
104	
	The second of
	8
	To all

	No.	5 Crosses	
Size Inches	Price Each	Size Inches	Price Each
1/2	\$.30	11/2	\$.58
1 3/4	.33 .35	2 2 ¹ / ₂	1.00 1.80
11/4	.45	3	2 60

No. 6 Side Outlet Crosses

			00000
Size Inches	Price Each	Size Inches	Price Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.35 .38	$\frac{11}{2}$	\$.65 1.35
1 11/4	.40	21/2	2.00
174	. 30	9	2.10



No. 7 Flanges

			anges	
The second secon	Size Inches	Price Each	Size Inches	Price Each
A SECOND	1/2	\$.14	11/2	\$.28
	3/4.	.15	2	. 30
	1	.15	$2^{1/2}$. 50
	11/4	.20	3	.75

No. 8 Square Floor Flanges

1101	o oquale	FIGOR FI	anges
Size	Price .	Size	Price
Inches	Each	Inches	Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.16	11/2	\$.50
3/4	.18	2	.90
1	. 20	21/2	1.35
11/4	.40	3	2.50



No. 9 Male or Female Acorns

Size Inches	Price Each	Size Inches	Price Each
1/2	\$.16	11/2	\$.35
1 3/4	.18	2 21/ ₂	.90 1.35
11/4	.25	3	2.00

In ordering railing fittings, describe kind wanted by number and size. Railing fittings will always be furnished with all openings tapped right-hand unless otherwise specfified. Railing fittings tapped right and left or left-hand will be charged for at 15 per cent additional, net. For galvanized railing fittings, add 50 per cent to above list.

45° Angle Malleable Iron Railing Fittings



No. 700A



No. 701A



No. 702A



No. 704A

Right and left and left, 25 per cent extra in quantity less than 25 pounds. Right and left and left, 15 per cent extra in larger quantities.



No. 706B

Angle railing fittings differing from those shown at special prices.

Reducing sizes, 15 per cent extra.

Price, Railing Fittings, Black per pound \$.18 Galvanized

D-	PRICE, EACH
No. Description 1 1 1/4	E SIZE, INCHES 21/2 3
700 A Elbow\$.40 \$.70 \$.9	0 \$1.44 \$2.00 \$3.00
	0 1.60 2.30 3.40
701 A Elbow	0 1.44 2.00 3.00
701½A Side Outlet50 .80 1.00	0 1.60 2.30 3.40
702 A Tee	0 1.60 2.40 3.80
703 A Side Outlet70 .90 1.10	0 1.80 2.80 4.30
704 A. Cross	
705 A Side Outlet 80 1.00 1.30	0 2.70 3.50 5.20
706 A Floor Flange30 .40 .5	6 .60 1.00 1.50

Malleable Iron Adjustable Railing Fittings



No. 70 Elbows Price Size Inches Inches \$1.10 $1\frac{1}{2}$ \$1.70 11/4 1.25

	No. 7	1 Tees
Size Inches	Price Each	Size Inches
1	\$1.30	11/2
11/4	1.50	2





No. 72 Stair Tees

\$2.00 2.50

Size Inches	Price Each	Size Inches	Price Each
1 11/4	\$1.30 1.60	$\frac{11}{2}$	\$2.15 2.50
1-/4	1.00	2	2,50

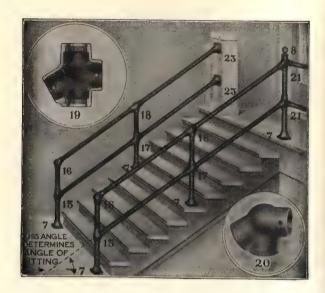
	No. 7	3 Crosses		1
Size Inches 1	Price Each \$1.50 1.75	Size Inches 1½	Price Each \$2.35 2.75	
174		,² No	. 74 Stain	Cross



	110. 17	Stair Crosses	
Size Inches	Price Each	Size Inches	Price Each
1	\$1.50	11/2	\$2.50
11/4	1.85	2	2.75

Add 50 per cent to above prices for galvanized railing fittings. All openings furnished tapped right hand. When otherwise ordered 15 per cent additional will be charged.

Malleable Iron Stair Rail Fittings



These fittings take the place of special angle fittings and are time and money savers. They have a good appearance and are stronger than the adjustable type.

These slip and screwed joint variable angle fittings are made so that all posts are screwed connections, making a solid, substantial job.

The posts are first screwed together and the rails are then fitted and riveted. The run of the fittings are made so that the pipe will slip into the fitting and at the same time allow for an angular variation of 2½ degrees on each side of the center line. In other words, a 30-degree angle fitting may be used on a railing varying from 27½ to 32½ degrees.

After the runs or angle pipes have been slipped into the fittings the pipe is drilled, pins are inserted, riveted over, and the ends of the pins filed smooth. When a railing is correctly finished using these fittings the entire job presents as neat an appearance as if the fittings had been made special to the correct angle.

These fittings may be used on any stair rail between 271/2 and 471/2 degrees, as follows:

30° fittings—for angles between 27½° and 32½°.

35° fittings—for angles between 32½° and 37½°.

40° fittings—for angles between 37½° and 42½°.

45° fittings—for angles between 42½° and 47½°.

			PRICE, EACH -		
Size Inches	No. 15 Angle Tee	No. 16 Angle Elbow	No. 17 Angle Cross	No. 18 Angle Tee	No. 19 Single An- gle Cross
11/	\$1.30	\$1.10	\$1.50	\$1.30	\$1.50
$\frac{11/4}{11/2}$	1.50 2.00	1.25	1.75 2.35	1.50 2.00	1.75
2'2	2.50	2.25	2.75	2.50	2.35 2.75

		PRIC	e, Each	
Size Inches	No. 20 Single Angle Tee	No. 21 An- gle Tee R. H. Side Outlet	No. 22 Angle Tee L. H. Side Outlet	No. 23 Square Post An- gle Flange
$ \begin{array}{c} 1 \\ 1 \frac{1}{4} \\ 1 \frac{1}{2} \end{array} $	\$1.30 1.50 2.00	\$1.85 2.20 3.00	\$1.85 2.20 3.00	\$1.50 1.75 1.90
4	2.50	3.60	3.60	2.25

When ordering, specify number and angle of fitting required.

Cast Iron Screwed Fittings Straight Elbows







Right and Left

	F	RICE, EACH			PR.CI	E. EACH
Size	RIGHT	HAND-	Right and	Sise		T HAND
In.	Black	Galv.	Left Blk.	In.	Black	Galv.
1/4 3/8	\$.05	\$.10	\$.06	31/2	\$1.05	\$2.10
3/8	. 05	.10	.06	4	1.20	2.40
1/2	.06	.12	.07	41/2	1.75	3.50
3/4	.08	.16	.09	5	2.00	4.00
1	$.10\frac{1}{2}$.21	.12	6	2.75	5.50
11/4	.16	.32	.18	7	4.70	9.40
$1\frac{1}{2}$.20	.40	.23	8	6.75	13.50
2	.28	.56	.32	9	9.00	18.00
$2\frac{1}{2}$.50	1.00	. 60	10	13.50	27.00
3	.75	1.50	.85	12	20.00	40.00
	_					

Straig	ht F	Pitched	Elbows

Size In. 1/2 3/4	Price Black Each \$.08 .10 .13	Size In. 11/4 11/2 2	Price Black Each \$.20 .25 .35	Size In. 2 ¹ / ₂ 3 3 ¹ / ₂	Price Black Each \$.65 1.00 1.30	Size In.	Price Black Each \$1.50
			. 30	3/2	4100		

60° Elbows

ingus Sill	

des	Trice		Price
Size	Black	Size	Black
In.	Each	In.	Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.25	$2^{1/2}$	\$1.10
3/4	. 30	3	1.65
1	. 35	4	2.75
11/4	.45	5	5.00
11/2	. 50	6	7.00
2	. 60		

221/2° Elbows

Size	Black	Size	Price Black	St	Price
In.	Each	In.	Each	Size In.	Black Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.25	11/2	\$.50	4	\$2.75
3/4	. 30	2	. 60	5	5.00
	. 35	$2\frac{1}{2}$	1.10	6	7.00
11/4	.45	3	1.65		

Reducing Elbows

Size	PRICE,	EACH	Size	Pri	CE, EACH
In.	Black	Galv.	In.	Black	
3/8	\$.06		3	\$.85	\$1.70
$\frac{1}{2}$.07	\$.14	31/2	1.20	2.40
3/4	.09	.18	4	1.40	2.80
1	.12	.24	41/2	2.00	4.00
11/4	.18	.36	5	2.30	4.60
11/2	.23	.46	6	3.15	6.30
2	.32	. 64	7	5.40	10.80
$2^{1/2}$. 60	1.20	8	7.75	15.50

450	-		
45°	ы	bo	WE

	lin.	7	
A			
-	4	6	١
			L
;			

Size PRICE, EACH In. Black Galv. \$.06 .06

	o Inich,		CIZE	PRICE.	LACH
In.	Black	Galv.	In.	Black	Galv.
1/	2 \$.07	\$.14	4	\$1.45	\$2.90
3/	4 .10	.20	$4^{1/2}$	2.20	
1	.12	.24	5	2.50	5.00
11/		.38	6	3.45	6.90
11/		.48	7	5.90	11.80
2		. 68	8	8.50	17.00
21/	2 .60	1.20	9	11.25	22.50
3	.90	1.80	10	17.00	34.00
31/	2 1.25	2.50	12	25.00	50.00

10 12 PRICE, EACH Black Galv.

9 \$10.50 \$21.00 10 15.50 31.00 12 23.00 46.00

Pitched Reducing Elbows

Size In.	Price Black Each	Size In.	Price Black Each	Size In.	Price Black Each
3/4	\$.10	11/2	\$.25	3	\$1.00
1	.13	2	.35	31/2	1.30
11/4	. 20	21/2	. 65		6 2 4 4 4

Cast Iron Screwed Fittings Straight Tees



Reducing Tees



On Run



On Outlet

Size	PRICE,	EACH-	Size	PRICE, I	CA CID
In.	Black	Galv.	In.	Black	Galv.
3/8	\$.09	\$.18	4	\$2.00	\$4.00
1/2	.10	.20	41/2	2.95	5.90
3/4	.14	.28	5	3.50	7.00
1	.17	.34	6	4.60	9.20
11/4	.27	. 54	7	7.80	15.60
11/2	.33	.66	8	11.25	22.50
2	.47	.94	9	15 00	30.00
$2^{1/2}$.83	1.66	10	22.50	45.00
3	1.25	2.50	12	33.50	67.00
31/2	1.75	3.50			01.00
Tees	reducing o	n the run	Tees	reducing on the	e outlet
ana das	amil ad Alice		1	The state of the s	Outie

Tees reducing on the run are described thus:

are described thus:

and are read $1\frac{1}{2}x1\frac{1}{4}x1$. and are read 11/2x1. Straight Crosses

Size In.	PRICE, Black	EACH Galv.	Size In.	PRICE, Black	Each Galv.
1/2 3/4	\$.16	\$.32	4	\$3.15	\$6.30
3/4	.22		$\frac{4^{1}/2}{5}$	4.60	9.20
11/4	.42	.54	6	5.50 7.25	11.00 14.50
$1\frac{1}{2}$.53	1.06	7	12.25	24.50
2	.75	1.50	8	17.50	35.00
2½ 3	1.30	2.60	9	23.50	47.00
$\frac{3}{3\frac{1}{2}}$	2.00	4.00 5.40	10 12	35.00 52.50	70.00
12	2.10	0.40	2.60	04.00	109.00



Reducing Crosses



Size		EACH	Size	PRICE	E, EACH
In.	Black	Galv.	In.	Black	Galv
1/2	\$.18	\$.36	4	\$3.50	\$7.00
3/4	.25	.50	41/2	5.10	10.20
1	.30	.60	5	6.00	12.00
11/4	.46	. 92	6	8.00	16.00
$1\frac{1}{2}$.60	1.20	7	13.50	27.00
2	.83	1.66	8	19.25	38.50
$2^{1/2}$	1.45	2.90	9	26.00	52.00
3	2.20	4.40	10	38.50	77.00
$3\frac{1}{2}$	3.00	6.00	12	58.00	116.00
2 ¹ / ₂ 3	1.45 2.20	2.90 4.40	9	26.00 38.50	52.00 77.00

Y Branches

			_		01100
Size In.	PRICE Black	Galv.	Size In.	PRICE, Black	Each Galv.
1/2	\$.20	\$.40	4	\$4.00	\$8.00
3/4	. 28	. 56	$4^{1/2}$	5.90	11.80
1	.34	.68	5	7.00	14.00
11/4	. 54	1.08	6	9.20	18.40
11/2	. 66	1.32	7	15.60	31.20
2	.94	1.88	8	22.50	45.00
$2^{1/2}$	1.66	3.32	10	45.00	90.00
3	2.50	5.00	12	67.00	134.00
31/2	3.50	7.00			



Cast Iron Screwed Fittings Close Pattern Return Bends



Close pattern return bends will not make up parallel coils, as the distance, center to center, of two adjacent bends is greater than the center to center of opening of a single bend.

			PRICE, E	ACH	
	Center	*		Right	,
Size	to Center	Rigi	HT HAND-	and Left	Left Hand
Inches	Inches	Black	Galvanized	Black	Black
1/2	11/4	\$.18	\$.36	\$.21	\$.21
$\frac{1}{2}$ $\frac{3}{4}$	11/2	.20	.40	.23	.23
1	13/4	.22	.44	.26	.26
11/4	21/4	.28	.56	.33	. 33
11/2	$2\frac{1}{2}$.40	.80	.46	.46
2	$3\frac{1}{4}$.57	1.14	. 66	. 66
$2^{1/2}$	$3\frac{3}{4}$	1.20	2.40	1.40	1.40
3	41/4	1.70	3.40	1.95	1.95
4	6	5.00	10.00	5.25	5.25

Close Pattern Pitched Return Bends

Size Coil Inches Feet	Price R.H. Each	Size Inches	Length Coil Feet	Price R.H. Each	Size Inches	Length Coil Feet	Price R.H. Each
1 3	\$.26	. 1	6	\$.26	11/4	5	\$.33
1 4	.26	1	8	.26	11/4	6	.33
1 5	.26	11/4	4	.33			

All right and left pitched return bends made to order; 1-inch bends for coils longer than 8 feet tapped straight. Pitched return bends have length of coil marked on them.

Open Pattern Return Bends



	Center	P	RICE, EA	CH		Center		PRICE, EA	CH-
	to			Right		to			Right
Size	Center	Right	HAND	and Left	Size	Center	Right	F HAND	and Left
In.	In.	Black	Galv.	Black	In.	In.	Black	Galv.	Black
3/4	17/8	\$.26	\$.52	\$.30	2	$4\frac{1}{2}$	\$.80	\$1.60	\$.92
1	23/8	.30	.60	.35	21/2	$5\frac{1}{2}$	1.35	2.70	1.55
11/2	3	.40	.80	.46	3	$6\frac{1}{2}$	2.20	4.40	2.50
11/4	$3\frac{1}{2}$. 55	1.10	. 64	4	$7\frac{1}{2}$	6.50	10.00	
	_		_	-					

Return Bends with Back Outlet

	Center		Price, E.	ACH		Center	I	PRICE, EA	CH-
	to			Right .		to	,		Right
Size	Center	Right	HAND	and Left	Size	Center	RIGHT	HAND	and Left
In.	In.	Black	Galv.	Black	In.	In.	Black		Black
3/4	11/8	\$.38	\$.76	\$.42	2	31/4	\$1.15	\$2.30	\$1.30
1	21/4	.42	.84	.48	$2^{1/2}$		2.00		2.30
$\frac{11/4}{11/2}$	21/4	. 60	1.20	. 70	3	41/4	3.00	6.00	3.50
11/2	$2\frac{1}{2}$.80	1.60	. 95					

Back outlet of R. & L. return bends is always tapped right hand.

Wide Pattern Return Bends



	Center	PRICE,			Center	Price	, EACH
Size	to Center	RIGHT]	HAND	Size	to Center		HAND
Inches	Inches	Black	Galv.	Inches	Inches	Black	Galv.
1	3	\$.45	\$.80	11/2	6	\$1.60	\$2.60
1	4	. 50	.90	11/2	8	2.00	3.25
1	5	. 60	1.10	2	47/8	1.75	3.00
1	6	. 75	1.30	2	6	2.00	3.25
1	8	1.00	1.60	2	7	3.00	4.50
11/4	4	1.00	1.57	2	8	3.50	5.00
11/4	6	1.25	2.00	4	11	7.50	11.00
11/2	47/8	1.30	2.30				

Cast Iron Branch Tees

For Steam Pressures up to 100 Pounds





No. 3

The run and back opening of branch tees are tapped the same size as branches, unless otherwise ordered.

	PRICE, EACH										
	1	-INCH BRANCE	IES-		INCH BRANCH	D.					
	CENTER	TO CENTER, 2	2 INCHES	CENTER	TO CENTER, 3	INCHE					
No. of		RUN, INCHES			RUN, INCHES-	AITOHE:					
Branch	hes 1 or 11/4	11/2	2	11/4 or 11/2	2	21/2					
2	\$.90	\$1.00	\$1.15	\$1.30		-/-					
3	1.05	1.15	1.35	1.65	\$1.90	\$2.40					
4	1.15	1.30	1.60	2.00	2.40	2.85					
5	1.35	1.45	1.85	2.40	2.90	3.55					
6	1.60	1.75	2.10	2.80	3.30	3.95					
7	1.90	2.20	2.45	3.20	3.90	4.20					
8	2.20	2.45	2.75	3.60	4.50	4.95					
9	2.65	2.90	3.40	4.30	5.25	6.15					
10		3.30	4.00	4.80	5.85	6.85					
11		4.50	4.80	5.00	6.25	7.25					
12		4.75	5.10	5.25	6.50	7.65					
13		5.50	6.00	6.00	7.00	8.25					
14		7.00	7.25	6.75	7.75	9.00					
15		7.50	7.75	7.50	8.50	9.75					
16		8.00	8.25	8.50	9.50	10.75					

			PRICE	EACH		
	11	-INCH BRANCE			INCH BRANCHE	-
		O CENTER, 31		CENTER	TO CENTER, 4	Largerna
No. of		Run, Inches		0.000	RUN, INCHES -	INCHES
Branch	es 11/2 or 2	21/2	3 '	2	21/2 or 3	31/2
2	\$2.10			\$4.10	/-	-/2
3	2.70	\$3.45	\$3.80		AF 75	41111
				5.25	\$5.75	\$6.25
4	3.35	4.15	4.60	6.40	7.00	7.75
5	4.00	5.00	5.50	7.65	8.50	9.25
6	4.65	5.75	6.25	8.80	9.75	10.75
7	5.25	6.50	7.25	10.60	11.75	13.00
8	5.85	7.00	7.75	11.50		
					12.75	14.00
9	6.50	8.25	9.00	12.25	13.50	15.00
10	7.60	9.25	10.00	13.50	15.00	16.50
11	8.00	9.75	10.75			40.00
12	8.50	10.50	11.50			
3.44	0.00	10.00	44.00			

Nos. 1 and 2 branch tees with branches tapped left hand, and Nos. 3 branch tees with branches tapped right hand, can be furnished at the regular prices.

1-inch branch tees, 1-inch or $1\frac{1}{4}$ -inch run, are $1\frac{3}{4}$ inches, inside diameter. 1-inch branch tees, $1\frac{1}{2}$ -inch or 2-inch run, are $2\frac{1}{4}$ inches inside diameter.

11/4-inch branch tees are all 21/2 inches inside diameter.

1½-inch branch tees are all 2¾ inches inside diameter.

2-inch branch tees are all 3½ inches inside diameter.

Always order branch tees by size and number.

Cast Iron Screwed Fittings

Reducers



Size In.	PRICE. Black	Each Galv.	Size In.	PRICE, Black	Each Galv.
41/2	\$1.85	\$3.70	8	\$6.75	\$13.50
5	2.00	4.00	9	8.35	16.70
6	2.70	5.40	10	10.00	20.00
7	5.35	10.70	12	15.00	30.00

Caps

Size	PRICE,	EACH	Size	Price.	EACH
In.	Black	Galv.	In.	Black	Galv.
4	\$.87	\$1.74	8	\$2.85	\$5.70
41/2	1.05	2.10	9	4.75	9.50
5	1.20	2.40	10	5.50	11.00
6	1.55	3.10	12	7.00	14.00
7	2.50	5.00			



Bushings



Size In.	Price, Black	Each Galv.	Size In.	PRICE, Black	Each Galv.
3/8	\$.04	\$.08	4	\$.50	\$1.00
1/2	.04	.08	41/2	.75	1.50
3/4	.05	. 10	5	.93	
1 /2	.06	.12	6		1.85
11/4	.07			1.25	2.50
		.14	7	1.87	3.75
11/2	.09	. 18	8	2.75	5.50
2	. 14	. 28	9	3.25	6.50
$2^{1/2}$. 21	. 42	10	3.75	7.50
3	.30	. 60	12	5.00	10.00
31/2	.40	.80		0.00	10.00

Plugs

Size In.	PRICE, Black	Each Galv.	Size In.	Price Black	, EACH Galv,
1/8	\$.02	\$.04	$3\frac{1}{2}$	\$.38	\$.76
1/4	.02	.04	4	.42	.84
3/8	.02	.04	41/2	. 65	1.30
1/2	.02	.04	5	. 88	1.75
3/4	.03	.06	6	1.20	2.40
11/			_		
			_		
			-		
			_		
			14	3.00	10.00
$ \begin{array}{c} 1 \\ 1 \frac{1}{4} \\ 1 \frac{1}{2} \\ 2 \\ 2 \frac{1}{2} \\ 3 \end{array} $.04 .05 .07 .10 .18	.08 .10 .14 .20 .36 .50	7 8 9 10 12	1.85 2.75 3.25 3.75 5.00	3.70 5.50 6.50 7.50 10.00



Solid Plugs

Size In.	Price Each Black	Size In.	Price Each Black	Size In.	Price Each Black	Size In.	Price Each Black
1/4 3/8	\$.04 .04	$\frac{11/4}{11/2}$	\$.09 .11	$\frac{31}{2}$	\$.57 .63	8 10	\$4.15 5.75
3/8 1/2 3/4	.04	$\frac{2}{2^{1/2}}$.15	4 ¹ / ₂ 5	1.00	12	7.50
1	.08	3	.38	6	1.80		

Countersunk Plugs



Size	Each	Sise	Each	Size	Price Each
In.	Black	In.	Black	In.	Black
1/4	\$.04	11/4	\$.09	$3\frac{1}{2}$	\$.92
3/8	.04	11/2	.11	4	1.10
1/2	. 04	2	. 15	5	2.00
3/4	. 06	$2\frac{1}{2}$. 30	6	3.50
1	. 08	3	.40		

Locknuts

Size	PRICE,	EACH	Size	PRICE.	EACH
In.	Black ·	Galv.	In.	Black	Galv.
$2^{1/2}$	\$.27	\$.54	6	\$1.30	\$2.60
3	. 34	. 68	7	1.70	3.40
$3\frac{1}{2}$.47	. 94	8	2.35	4.70
4	. 64	1.28	9	2.70	5.40
41/2	.85	1.70	10	3.00	6.00
5	. 90	1.80	12	4.00	8.00



Cast Iron Eccentric Reducing Couplings



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
11/4	\$.55	3	\$2.40	5	\$6.00
11/2	.72	$3\frac{1}{2}$	3.00	6	8.00
2	1.00	4	4.00	7	9.00
$2\frac{1}{2}$	1.50	$4^{1/2}$	5.00	8	11.00

Cast Iron Eccentric Bushings

Size Inches	Price I Each	Size Inches	Price Each	Size Inches	Price Each
$1\frac{1}{4}$ $1\frac{1}{2}$	\$.22 .25	$\frac{31}{2}$	\$.80 1.00	7 8	\$3.75 5.50
$\frac{2}{2^{1/2}}$.27 .42	4 ¹ / ₂ 5	1.50 1.85	9 10	6.50 7.50
3	.60	6	2.50	12	10.00



Blow-Off Crosses

The utility and convenience of this special fitting for feeding and blowing-off boilers will recommend it. It is most conveniently placed in the position shown in the illus-tration. The large openings on the run are of the same size.

The reduced openings are usually of one size, but can be made to suit requirements. The reduced top in-



Standard

let is used for feeding the boiler.

To the lower reduced outlet the blow-off valve or cock is connected. The blind flange is removable for cleaning out purposes.

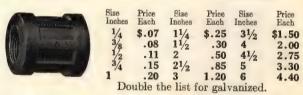
Standard

	For 125	Pounds Steam	m Working	Pressure	
Size	Price	Size	Price	Sise	Price
Inches	Each	Inches	Each	Inches	Each
21/2×11/2	\$9.00	3x2	\$10.00	5x3	\$18.00
21/2×2	9.00	4x2	12.00	6x21/2	27.00
2½x1½ 2½x2 2½x1½ 3 x1½	9.00	4x21/2	12.00	6x3	27.00
$3 x1\frac{1}{2}$	10.00	$5 \times 21/2$	18.00		****

Extra Heavy

	For 250 Pounds Ste	am Working Pressure	
Size	Price	Size	Price
Inches	Each	Inches	Each
21/2×21/2	\$12.00	4x2	\$16.00
3 x2	13.50	4x21/2	16.00

Cast Iron Right and Left Couplings



Extra Heavy Cast Iron Return Bends

For 250 Pounds Steam **Working Pressure**



Size In.	Center to Center In.	Price Each	Size In.	Center to Center In.	Price Each		enter to Center In.	Price Each
1	23/2	\$.63	11/4	21/2	\$.82 .97	$\frac{11/_{2}}{2}$	$\frac{21/2}{31/4}$	\$1.15 2.20
i	21/2	.75	11/4	31/4	1.10	2 2	4	2.25
i	4	.97	11/4	4	1.45	21/2	47/8	3.15
1	5 4 1/2	1.05 1.10	11/4	5 6	1.55 1.80	3	41/2	3.75

For galvanized extra heavy fittings, double above lists.

Extra Heavy Cast Iron Fittings For 250 Pounds Steam Working Pressure

Elbows



		EACH		PRICE	EACH
Size		Reducing	Size		Reducing
In.	Elbows	Elbows	In.	Elbows	Elbows
$\frac{1}{2}$ $\frac{3}{4}$	\$.25	\$.35	41/2	\$4.25	\$5 30
3/4	.30	. 40	5	5.50	6.80
1	.35	.45	6	8.00	10.00
11/4	. 45	. 55	7	12.00	15.00
11/2	. 60	.75	8	17.00	21.00
2	. 75	.95	9	25.00	31.00
21/2	1.25	1.55	10	28.00	35.00
3	2.00	2.50	12	40.00	50.00
31/2	2.75	3.40	14	110.00	
4	3.50	4.40	16	150.00	

			45	5° Elb	ows
Size	Price	Size	Price	Size	Price
In.	Each	In.	Each	In.	Each
1/2	\$.35	21/2	\$1.50	6	\$9.75
3/4	. 40	3	2.50	7	14.50
1	.44	$3\frac{1}{2}$	3.50	8	21.00
11/4	. 55	4	4.50	9	31.00
$1\frac{1}{2}$. 70	$4^{1/2}$	5.50	10	34.00
2	.90	5	6.75	12	48.00
				Tees	5



	1	1	١.
Size	PRICE	EACH Reduc.	- 2

\$.40

		TIMOL	, Linte		T MIC	E, EACH
	Size		Reduc.	Size		Reduc.
1	In.	Tees	Tees	In.	Tess	Tees
l	1	\$.55	\$.70	5	\$8.25	\$10.25
	11/4	. 70	.90	6	12.00	15.00
ı	11/2	.90	1.15	7	18.00	22.50
	2	1.15	1.40	8	25.00	31.00
	$2^{1/2}$	1.80	2.25	9	35.00	44.00
	3	3.00	3.75	10	42.00	52.00
	31/2	4.25	5.30	12	60.00	75.00
	4	5.50	6.85	14	150.00	
	$4\frac{1}{2}$	6.75	8.50	16	200.00	220.00

PRICE EACH

				С	rosses
	PRICE	, EACH		PRIC	E, EACH
Size		Reduc			Reduc-
In.	O	ing	Size	0	ing
		Crosses	In.	Crosses	Crosses
1/2	\$.60	\$.80	4	\$7.00	\$8.75
3/4	. 65	.85	41/2	8.50	10.00
1	.70	.90	5	11.00	13.75
11/4	.90	1.15	6	16.00	20.00
11/2	1.20	1.50	7	24.00	30.00
2	1.50	1.85	8	34.00	42.00
21/2	2.50	3.15	9	48.00	60.00
3	4.00	5.00	10	56.00	70.00
31/2	5.50	6.85	12	80.00	100.00

\$.55



Y Branches PRICE, EACH Size Y Red ing In. Branches Branch 1/2 \$.90 3/4 1.10 \$1.38 11/4 1.35 1.75 11/2 1.80 2.25 2 2.25 2.88 21/2 3.75 4.50 2 5.600 7.500

PRI	CE, EACH		Pric	E, EACH
	Reduc-			Reduc-
Size Y	ing Y	Size	Y	ing Y
In. Branche			Branches	
	N DIWINION	TIT!	Dianches	Branches
$\frac{1}{2}$ \$.90		4	\$11.00	\$13.75
3/4 1.10		41/2	13.50	
/4 2.10	11111			16.88
1 1.10	\$1.38	5	16.50	20.63
11/4 1.35	1.75	6	24 00	
				30.00
$1\frac{1}{2}$ 1.80	2.25	7	36.00	45.00
2 2.25	2.88	8	50.00	62.50
		_		
$2\frac{1}{2}$ 3.75	4.50	9	72.00	90.00
3 6.00	7.50	10	84.00	105.00
$3\frac{1}{2}$ 8.25	10.63	12	120.00	150.00
. D. I				

			Red	ucers			
Size Inches	Price	Size	Price	Size	Price	Size	Price
1/2	Each \$.28	Inches 2	Each \$.83	Inches $41/2$	Each	Inches	Each
3/4	.33	21/2	1.38	5	\$4.68		\$27.50
1 74	.39	3	2.20		6.00	10	31.00
11/4	.50	31/2	3.05	6 7	8.80	12	44.00
11/2	. 66	4	3.85	8	13.20		
172	.00	**		_	18.75		
			PI	ugs			
Size	Price	Size	Price	Size	Price	Size	Price
Inches	Each	Inches	Each	Inches	Each	Inches	Each
1/2 3/4	\$.04	2	\$.15	41/2	\$1.00	9	\$5.00
	.06	$2^{1/2}$.27	5	1.35	10	5.75
1	.08	3	.38	6	1.80	12	7.50
11/4	.09	$3\frac{1}{2}$. 57	7	2.80		
11/2	.11	4	. 63	8	4.15		
For	galvani	zed extr	a heavy	fittings,	double a	bove lis	ts.

Cast Iron Long Sweep Fittings

For Working Pressures: 125 Pounds Steam; 150 Pounds Water

No. 1 Elbows



Size	Black	Size	Black
Inches	Price, Each	Inches	Price, Each
3/4	\$.26	41/2	\$5.50
1	.32	5	6.50
11/4	.40	6	8.75
11/2	.55	7	13.00
2	.80	8	17.00
21/2	1.20	9	25.50
3	2.25	10	30.00
31/2	3.25	12	40.00
4	3.50		

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings, double list given above.

No. 2 Elbows

Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$.64	41/2	\$11.00
11/4	.80	5	13.00
$1^{1/2}$	1.10	6	17.50
2	1.60	7	26.00
$\frac{2^{1/2}}{3}$	2.40	8	34.00
	4.50	9	51.00
$3\frac{1}{2}$	6.50	10	60.00
4	7.00	12	80.00



For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized fittings double list given above.

No. 3 Tees



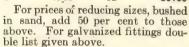
Size Inches	Black Price, Each	Size Inches	Black Price, Each
1	\$.48	$4^{1/2}$	\$8.25
$\frac{11/4}{11/2}$.60 .82	5	9.75 13.25
2	1.20	7	19.50
$\frac{2^{1}/_{2}}{3}$	1.80 3.40	8	25.50 38.00
$3^{1/2}$	4.90	10	45.00
4	5.25	12	60.00

For prices of reducing sizes, bushed in sand, add 50 per cent to those above. For galvanized

fittings double list given above.

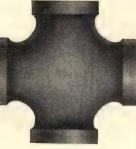
No. 5 Tees

Size	Black	Size	Black
Inches	Price, Each	Inches	Price, Each
1	\$.64	41/2	\$11.00
11/4	.80	5	13.00
11/2	1.10	6	17.50
2	1.60	7	26.00
$\frac{2^{1/2}}{3}$	2.40	8	24.00
3	4.50	9	51.00
$3\frac{1}{2}$	6.50	10	60.00
4	7.00	12	80.00





No. 4 Crosses



Size Inches	Black Price, Each	Size Inches	Black Price, Each
111/4	\$.85 1.10	4 ¹ / ₂ 5	\$17.50
11/2	1.50	6	24.00
2 ¹ / ₂	2.15 3.20	8	35.00 45.00
$\frac{3}{31/2}$	6.00 8.75	9	68.00 80.00
4	9.50	12	107.00

For prices of reducing sizes, bushed in sand, add 50 per cent. For galvanized fittings, double list given above.



Standard Cast Iron Flange Unions

For 125 Pounds Steam Working Pressure

Sizes 14-inch and larger are to be used with O. D. pipe of the same size.

		No.				Diam.	No.		
Size	Flange	s of	PRICE	EACH	Size	Flanges	of	PRICE.	EACH
In.	In.	Bolts	Black	Galv.	In.	In.	Bolts	Black	Galv.
1/2 3/4	$2^{3}/_{4}$	3	\$.40	\$.80	5	91/8	5	\$3.15	\$6.30
3/4	$3\frac{3}{8}$	3	.46	.92	6	10^{3} /8	6	3.95	7.90
1	35/8	3	. 52	1.04	7	$11\frac{5}{8}$	7	5.50	11.00
11/4	41/8	4	. 64	1.28	8	$12\frac{3}{4}$	8	7.00	14.00
11/2	$4\frac{1}{2}$.78	1.56	9	$13\frac{7}{8}$	9	10.00	20.00
2	$5\frac{1}{8}$	4	1.00	2.00	10	$15\frac{1}{2}$	10	11.50	23.00
21/2	57/8	4	1.25	2.50	12	$17\frac{7}{8}$	12	16.00	32.00
3	$6^{5/8}$	4	1.50	3.00	14	$20\frac{5}{8}$	14	28.00	56.00
31/2	$7\frac{1}{4}$	4	1.80	3.60	15	$20\frac{5}{8}$	14	35.00	70.00
4	$7\frac{3}{4}$	5	2.10	4.20	16	23	16	60.00	
41/2	83/8	5	2.70	5.40					

Extra Heavy Cast Iron Flange Unions

For 250 Pounds Saturated Steam Working Pressure



Size In. 1/2 3/4 1 11/4 11/2	Diam. Flanges In. 314 35/8 41/8 45/8	No. of Bolts 4 4 4 4 4	Price Each \$.70 .70 .80 1.00	Size In. 4 41/2 5 6 7	Diam. Flanges In. 8 834 938 1078	No. of Bolts 7 8 8 9 10	Price Each \$3.15 4.00 4.75 6.00 8.25
$ \begin{array}{c} 1 \\ 1 \frac{1}{4} \\ 1 \frac{1}{2} \\ 2 \\ 2 \frac{1}{2} \\ 3 \end{array} $	41/8	4	1.00		$10\frac{7}{8}$	9	6.00
$3\frac{1}{2}$	$7\frac{1}{2}$	6	2.70	12	18	14	24.00

Extra Heavy Flange Unions

For 400 Pounds Steam Working Pressure



Sizes not listed below can be made to order.

For galvanized extra heavy flange unions, add 60 per cent to list below.

Size In.	Diam. Flange Inches	No. of Bolts	Price Each	Size In.	Diam. Flange Inches	No. of Bolts	Price Each	
1	41/2	4	\$1.80	4	91/4	8	\$8.80	
11/4	5	5	2.30	5	$10\frac{1}{4}$	8	9.90	
$\frac{11/4}{11/2}$	6	5	3.20	6	1134	. 8	11.60	
2	$6\frac{1}{2}$	5	3.50	7	13	. 10	21.00	
$2\frac{1}{2}$	71/4	6	4.40	8	141/4	12	28.00	
3	81/4	6	6.20	10	171/4	- 15	35.00	
$3\frac{1}{2}$	83/8	6	7.60	. 12	1914	16	50.00	

Walworth Kewanee Flange Unions



Tested to 400 Pounds Hydraulic Pressure

Brass and malleable iron self-seating ball joint. No gasket required. Made entirely of the highest grade malleable iron, excepting the seat, which is of brass.

Size	PRICE	, EACH	Size	PRICE,	EACH	Size		
In.	Black	Galv.	In.	Black	Galv.	In.	Black	Galv.
1	\$.80	\$1.10	3	\$4.80	\$6.50	6	\$12.50	\$16.90
11/4	1.20	1.60	31/2	6.00	8.10			24.30
$1^{1/2}$	1.60	2.15	4	7.50	10.15	10	28.80	38.90
2	2.00	2.70	5	10.00	13.50			
$2\frac{1}{2}$	3.20	4.30						

Common Cast Iron Flanges

Not Faced



Size Inches Price Each Size Inches Price Each Size Inches Price Each 3/4x4 \$.22 3½x 9 \$1.15 7x13½ \$2.86 3/4x5 .30 3½x10 1.50 7x14 3.25 1 x5 .30 4 x8 .90 7x15 4.00 1 x6 .42 4 x 8½ 1.00 8x13 2.86	Each Inches \$1.15 7x13\frac{1}{2} 1.50 7x14 .90 7x15 \frac{1}{2} 1.00 8x13 1.15 8x13\frac{1}{2}	$3\frac{1}{2}$ X 9 $3\frac{1}{2}$ X10	\$.22 .30	3/4×4 3/4×5 1 ×5
3/4x5 .30 31/2x10 1.50 7x14 3.25 1 x5 .30 4 x 8 .90 7x15 4.00	1.50 7x14 .90 7x15 /2 1.00 8x13 1.15 8x13 ¹ / ₂	$3\frac{1}{2} \times 10$ 4×8 $4 \times 8\frac{1}{2}$.30	3/4×5 1 ×5
3/x5 .30 31/2x10 1.50 7x14 3.29 1 x5 .30 4 x 8 .90 7x15 4.00	1.50 7x14 .90 7x15 /2 1.00 8x13 1.15 8x13 ¹ / ₂	4 x 8 4 x 8 ¹ / ₂	.30	1 x5
1 x5 .30 4 x 8 .90 7x15 4.00	$\begin{array}{ccc} .90 & 7x15 \\ /2 & 1.00 & 8x13 \\ 1.15 & 8x13\frac{1}{2} \end{array}$	4 x 8 4 x 8 ¹ / ₂		
1 v6 42 4 v 81/4 1 00 9v12 9 00	1.00 8x13 1.15 8x13 ¹ / ₂	4 x 8½ 4 x 9	.42	
- A 072 1.00 OAIS Z.MI	1.15 $8x13\frac{1}{2}$	4 x 9		1 x6
			.25	$1\frac{1}{4} \times 4\frac{1}{2}$
$\frac{11}{4}$ x5 .30 4 x10 1.50 8x14 3.25	T.UU QXI4	4 x10	.30	11/4×5
$1\frac{1}{4}$ x6 .40 $4\frac{1}{2}$ x 9 1.15 8x15 4.00		41/2× 9	.40	11/4×6
$\frac{11}{2}$ x5 .30 $\frac{41}{2}$ x 9\frac{1}{4} 1.25 8x16 5.00			.30	$1\frac{1}{2}$ x5
$1\frac{1}{2}$ x6 .40 $4\frac{1}{2}$ x10 1.50 9x15 4.00			.40	$1\frac{1}{2}$ x6
2 x6 .42 $4\frac{1}{2}$ x11 1.75 9x16 5.00			.42	
$2 \times 6\frac{1}{2}$.50 5 x10 1.50 9x17 5.75			.50	
2 x7 .62 5 x11 1.75 10x16 5.00	1.75 10x16	5 x11	. 62	
2 x8 .90 5 x12 2.20 10x17 5.75		5 x12	.90	
$2\frac{1}{2} \times 6$.42 5 $\times 12\frac{1}{2}$ 2.20 10×18 7.00	/2 2.20 10x18	$5 \times 12^{1/2}$.42	$2\frac{1}{2} \times 6$
$2\frac{1}{2} \times 6\frac{1}{2}$.50 6 x10 1.50 10x19 7.50			.50	$2\frac{1}{2} \times 6\frac{1}{2}$
$2\frac{1}{2}$ x7 .62 6 x11 1.75 12x18 7.06	1.75 12x18	6 x11	.62	$2^{1/2}$ X7
$2\frac{1}{2}$ x8 .90 6 x12 2.20 12x19 7.50	2.20 12x19	6 x12	.90	
$3 \times 6\frac{1}{2}$.50 6 $\times 12\frac{1}{2}$ 2.20 12×20 8.50	2 2.20 12x20	6 $x12\frac{1}{2}$.50	
3 x7 .62 6 x13 2.80 14x20 8.50		6 x13	.62	
$3 \times 7\frac{1}{2}$.75 6 $\times 13\frac{1}{2}$ 2.80 14×21 9.50	2 2.80 14x21	$6 \times 13\frac{1}{2}$.75	
3 x8 .90 6 x14 3.25 15x21 9.50	3.25 15x21			
3 x9 1.15 7 x12 2.20 15x221/4 14.00				
$3\frac{1}{2}$ x8 .90 7 x12\frac{1}{2} 2.20 16x23\frac{1}{2} 18.00		7 x12½		
$3\frac{1}{2} \times 8\frac{1}{2}$ 1.00 7 x13 2.80	2.80	7 x13	1.00	$3\frac{1}{2}$ x $8\frac{1}{2}$

Sizes 14 inch and larger are to be used with O. D. pipe of same size.

Cast Iron Floor Flanges

Tapped and Drilled



			PRICE	E, EACH-						
Diam.	PIPE SIZE, INCHES									
In.	3/4	3/8	1/2	3/4	1	11/4				
$2\frac{1}{2}$	\$.14	\$.14	\$.15	\$.18						
3	*.14	*.14	.15	.18	\$.20					
$3\frac{1}{2}$.17	*.17	*.18	.20	\$.23				
4		. 20	.20	.21	*.22	*.25				
4 ¹ / ₂ 5			.26	.28	.28	.30				
			.31	.33	.33	.35				
$5\frac{1}{2}$.42	.42	.42				
6				.52	.52	.52				
$6\frac{1}{2}$	* * * *					.62				

*Standard diameters.

Diam.			Prom	RICE, EACH————————————————————————————————————		,
In.	11/2	2	21/2	3	31/2	4
4	\$.28	\$.30	* * * * *			
4½ 5	*.31	. 35				
	.36	*.45				
$\frac{51/2}{6}$.42	.45	*****	* * * * * *		
61/2	.62	.55 .65	*\$.65	6 00		* * * * * *
7		.75	.75	\$.90 *1.00		*, * + * * *
8				1.25	\$1.40	*\$1.50

*Standard diameters.

Galvanized floor flanges furnished at double the above prices.

Grafton Coil Hanger and Spacer Combined For Overhead Coils



		BICE, EACH-	-	PRICE, EACH					
	For 1-In.	11/4-In.	1½-In.	No.	1-In.	11/4-In.	11/2-In.		
of	Pipe	Pipe	Pipe	of	Pipe	Pipe	Pipe		
Bran	- 2½-In.	3-In.	$3\frac{1}{2}$ -In.	Bran-	21/2-In.	3-În.	31/2-In.		
ches	Center	Center	Center	ches	Center	Center	Center		
3	\$.30	\$ 36	\$.45	9	\$.96	\$1.16	\$1.41		
4	. 40	. 48	. 60	10	1.08	1.30	1.58		
5	. 50	. 60	.75	11	1.20	1.44	1.75		
6	. 60	.72	.90	12	1.32	1.58	1.95		
7	. 72	. 86	1.07	13	1.48	1.74	2.15		
8	.84	1.00	1.24	14	1.64	1.90	2.35		

Sectional Steel Hook Plates

This sectional steel hook plate is stronger, neater and easier to work than east iron.

It will not break and is practically indestructible.

Furnished in long strips; as many hooks as desired can easily be cut off at the ribs shown.

For Pipe Inches	No. of Hooks per Strip	Price per Strip	O S S S S S S S S S S S S S S S S S S S
1	30	\$2.50	WS
11/4	30	3.25	Torn
11/2	25	3.75	
	nn.	4 0 0	

No. 10 Perfection Floor and Ceiling Plates Cold Rolled Steel







ed			

Size	PRICE,	EACH	OI!	PRICE,		,	PRICE	EACH .
In.	Black	Nickel- Plated	Size In.	Black	Nickel- Plated	Size In.	Black	Nickel- Plated
1/4	\$.14	\$.25	11/4	\$.22	\$.35	$3\frac{1}{2}$	\$.80	\$1.00
3/8	. 15	. 26	11/2	.25	.38	4	1.00	1.25
$\frac{1}{2}$ $\frac{3}{4}$.16	. 27	2	.30	. 45	41/2	1.25	1.50
3/4	.17	.28	$2\frac{1}{2}$. 50	. 65	5	1.50	1.75
1	. 20	.32	3	. 65	. 80	6	1.75	2.00

One-piece Floor Plates



	F	RICE, EAC	H		P	RICE, EACE	
Size	Plain	N. P.	N. P.	Size	Plain	N. P.	N. P.
In.	Steel	Steel	Brass	In.	Steel	Steel	Brass
3/8-1	\$.07	\$.10	\$.16	31/2	\$.30	\$.42	\$.55
11/4	.08	.11	.22	4	.40	.50	. 65
11/2	.08	.11	.22	$4^{1/2}$.50	.60	.75
2	. 10	.14	.30	5	60	.70	.85
21/2	.20	.30	.37	6	.70	.80	.95
3	.25	.35	. 45				

No. 22 Steel Drop Forged I-Beam Clamps



I to	$6\frac{1}{2}$ inches.	
No.	For Pipe Inches	Price
1	½ to 1½	Each \$.25
2	2 " 3	.30
3 4	3½ " 6 7 " 8	.35
5	9 " 12	.70

Adjustable to fit I-beams



	A	djustable	Ste	el Pipe	Hang	ers
1	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
	$\frac{1}{2}$	\$.08 .08	$\frac{2}{2^{1/2}}$	\$.14 .16	4 ¹ / ₂ 5	\$.30
	11/4	.09	$\frac{3}{3^{1/2}}$.18	6	
	11%	12	4/2	25	4 1	

Extension Bars

.

No,	Width In.	Price per Foot	No.	Width In.	Price per Foot
11	7/8	\$.08	14	$1\frac{1}{8}$	\$.12
12	7/8 7/8	.09	15	11/4	
13	1	.11			

Malleable Iron Sockets



			_	
Pipe nes	Price Each	No.	For Pipe Inches	Price Each
ś	\$.08	4	1/2	\$.15
	. 10	5	3/4	. 20

With Pipe Threads

. 12 No. 27 Grabler Flattened End Bolts

		1 1 50	1 111 0	CLEA		
	Thread	Price	7	Chread	Price	
No.	In.	Each	No.	In.	Each	A CONTRACTOR OF THE PARTY OF TH
1	1/8	\$.08	3	3/8	\$.12	AULI, CL. LLD. (St.
2	1/4	.10	4	1/2	.16	
		Bolt	Threa	ıd _		
5	3/8	\$.08	8	9/6	.11	
6	7/8	.09	9	5/8	.12	
7	1/2	. 10	10	3/4	.16	

Pipe Hanger Lag Screws



With Flattened Head

No. 1 2 3	For Pipe, In. 1/2 to 11/2 2 " 3 31/2 " 6	With Bolt Price, Eac \$.10 .12 .14	eh :	No. 4 5	For Pipe, In. 7 to 8 8 " 12	With Bolt Price, Each \$.20 .25
		With T	hreaded	End		
No 1 2	Pipe Thread, In.	Price Each \$.10 .12		No. 3	Pipe Thread, In.	Price Each \$.14 .20

Expansion Pipe Hangers

With Sectional Ring

For 8-inch and Smaller Pipe



Prices do not include pipe from lag screw, or ceiling plate.

Size Inches 3/4 1 11/4 11/2 2	Tapped for I. P. Inches 1/8 1/8 1/4 1/4	Price Each \$.32 .33 .35 .45 .55	Size Inches 3½ 4 4½ 5 5 6	Tapped for I. P. Inches	Price Each \$1.00 1.15 1.60 2.00 2.50
2 2 ¹ / ₂ 3	1/4 1/4 8/8		_	3/4 3/4 3/4 8/2	2.50 3.00 3.75

Expansion Pipe Hangers With Solid Ring and Ceiling Plate

Prices do not include pipe from ceiling plate to ring

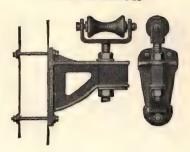
CHA.	reces do n	ot menu	e pipe ir	om cem	ing plate	to ring
10160	Tapped for		PRICE.	EACH -	6 F	to ming.
In.	I. P., In.	Complete	Rings	Plates	Buttons	Consequent Consequence
1/2	1/4	\$.17	\$.08	\$.08	\$.06	
3/4	3/8	.17	.08	.08	.06	
1	3/8	.18	.12	.08	.06	
11/4	3/8	.19	.15	.08	.06	
11/2	%8	.25	.20	.09	.07	J 1
2	2/8	.29	.25	.09	.07	
2½ 3	12	.36	.30	. 10	.08	
31/2	12	.44	.40	.10	.08	
4	1/2	. 55	.50	.10	.08	
	72	.63	. 60	.10	.08	
4 ¹ / ₂ 5	32	.90 1.12	.80	.10	.08	
6	32	1.35	1.00	.10	.08	
7	3/	1.80	1.25 1.70	.10	.08	100
8	64			. 10	.08	
0	%	2.25	2.15	.10	.08	

Reznor Steel Wire Pipe Hooks

In ordering, always specify the length of hook desired, otherwise the shortest, or standard length, will be shipped.

Pipe Size			PRICE, PER 100		
Inches	3	4	LENGTH, INCHES	8	10
3/8	\$1.00 1.10	\$1.15 1.20	\$1.40 1.50	01.00	
3/4		1.30	1.70	\$1.90 2.20	* * * * *
11/4		1.50 1.90	2.00 2.50	2.40	\$2.80
11/2			2.70	3.00 3.50	3.50 4.00
2			2.90	4.00	4.50

No. 1907 Universal Adjustable Pipe Roll Brackets



	PRICE, EACH								
Size Pipe	00	WA	No.	2	3	4			
Inche	6 to 9	9 to 12	12 to 15	15 to 18	18 to 21	21 to 24			
5 6	\$17.00 17.50	\$18.00 18.50	\$18.50 19.00	\$19.00 19.50	\$19.50 20.00	\$22.00			
7	18.00	19.00	19.50	20.00	20.50	22.50 23.00			
8	18.00 18.50	19.00 19.50	19.50 20.00	20.00 20.50	20.50 21.00	23.00			
10	18.50	19.50	20.00	20.50	21.00	23.50 23.50			
12 14	19.00 20.00	21.00 22.00	21.50 22.50	22.00 23.00	23.00	25.00			
		00	AL . 30	25.00	23.50	25.00			

Walworth Pipe Rolls and Chairs



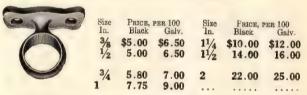
Chair and Roll



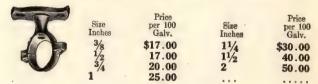
Roll Only

37	Size Pipe	Rolls and	-Price, Each- Roll	Roll and
No.	Inches	Chairs	Only	Pin
1	$4, 4\frac{1}{2}, 5, 6$	\$2.80	\$.90	\$1.15
2	7, 8, 9, 10	5.00	2.00	2.25
3	12, 14, 15 °	6.75	3.10	3.40
4	16, 18, 20	8.50	5.10	5.40
5	22, 24	10.25	6.00	6.80

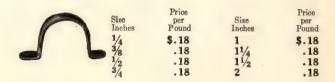
Solid Ring Pipe Hangers



Split Ring Swivel Base Pipe Hangers



Tinned Pipe Straps



No. K-1350 Blake Hanger Inserts For Concrete Construction





No. K-1350

Sectional View

The Blake Hanger Insert has ample bearing surface, so that it will not pull out after concrete is set.

The sectional view shows that the upper chamber permits nut to be turned and that at the bottom it is channeled to hold the nut firm.

made in 5 sizes.		
Price, No. K-1350 for 3/8-Inch	Bolteach \$.	.22
Price, No. K-1350 for 1/2-Inch	Bolteach	.28
Price, No. K-1350 for 5/8-Inch	Bolteach	34

Diamond Malleable Iron Expansion Shields



In ordering specify diameter of screw or bolt to be used and if lag screw shields, speci y whether short standard or long standard is wanted.

Prices do not include lag screw or machine bolt.

Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100	Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100
1/4	11/2		\$15.00	5/8	$3\frac{1}{2}$	7/8	\$45.00
5/16 3/8	13/4	916	18.00	3/4	$3\frac{1}{2}$	$1\frac{1}{8}$	65.00
3/8	$2\frac{3}{4}$	5/8	25.00	7/8	5	13/8	95.00
7/16	23/4	11/16	32.00	1	5	$1\frac{1}{2}$	110.00
1/2	31/2	8/1	38.00				

Square Head Coach and Lag Screws



Adopted September 1, 1923

Price per 100-Manufacturers' Standard List

Length				-DIAME	TER, INCHE	8		
Inches	1/4 and 5/	16 3/8	7/16		% and %		7/8	. 1
11/2	\$2.25	\$2.70	\$3.15	\$3.75				
2	2.45	3.00	3.50	4.15	\$6.00			
21/2	2.65	3.30	3.85	4.55	6.50	\$9.20		
3	2.85	3.60	4.20	4.95	7.00	9.90	\$15.00	
31/2	3.05	3.90	4.55	5.35	7.50	10.60	16.00	\$22.00
4	3.25	4.20	4.90	5.75	8.00	11.30	17.00	
41/2	3.45	4.50	5.25	6.15	8.50	12.00	18.00	24.60
5	3.65	4.80	5.60	6.55	9.00	12.70	19.00	25.90
51/2	3.85	5.10	5.95	6 95	9.50	13.40	20.00	27.20
6	4.05	5.40	6.30	7.35	10.00	14.10	21.00	28.50
61/2	5.25	6.70	7.65	8 75	10.50	14.80	22.00	29.80
7	5.45	7.00	8 00	9.15	11.00	15.50	23.00	31.10
71/2	5.65	7.30	8 35	9.55	11.50	16.20	24.00	32.40
8	5.85	7.60	8.70	9.95	12.00	16.90	25 00	33.70
9	6.25	8 20	9.40	10.75	13.00	18.30	27.00	36.30
10	6 65	8.80	10.10	11.55	14.00	19.70		38.90
11	7.05		10.80	12 35	15.00	21.10	31.00	41.50
12		10.00		13.15	16.00	22.50	33.00	44.10
Add for								
ach Ir		. 60	.70	.80	1.00	1.40	2.00	2.60

Hexagon heads, 10 per cent extra.

Tee heads 50 per cent extra.

Skein screws, list price, same as lag screws.

Length of threads approximately three-fifths of length of screws.

Machine Bolts





Price,	per	Hundred-	-Man	ufacturers	' Standard	List
Length	-			METER, INCHES-		
Inches	1/4	5/16	3/2	7/16	1/2	% and 5/8
	\$1.70		\$2.4		\$3.70	\$5.50
2	1.80		2.6		4.00	5.90
$2\frac{1}{2}$	1.90		2.8		4.30	6.30
3	2.00		3.0		4.60	6.70
31/2	2.10		3.2		4.90	7.10
4	2.20	2.75	3.4	0 4.25	5.20	7.50
41/2	2.30	2.90	3.6	0 4.50	5.50	7.90
5	2.40	3.05	3.8		5.80	8.30
$5\frac{1}{2}$	2.50	3.20	4.0	0 5.00	6.10	8.70
6	2.60	3.35	4.2	0 5.25	6.40	9.10
61/2	3.70	4.50	5.4	0 6.50	7.70	9.50
7	3.80	4.65	5.6	0 6.75	8.00	9.90
71/2	3.90	4.80	5.8	7.00	8.30	10.30
8	4.00	4.95	6.0	7.25	8.60	10.70
9	4.20	5.25	6.4	7.75	9.20	11.50
10	4.40	5.55	6.8	0 8.25	9.80	12.30
11	4.60	5.85	7.2		10.40	13.10
12	4.80	6.15	7.6	9.25	11.00	13.90
Length	-		——D	AMETER, INCHES	J	
Inches	3/4			1	11/3	11/4
11/2	\$7.			\$15.10	\$22.50	\$30.00
2	8.:			16.00	23.70	31.50
$2\frac{1}{2}$	8.			16.90	24.90	33.00
3	9.			17.80	26.10	34.50
$3\frac{1}{2}$	9.			18.70	27.30	36.00
4	10.			19.60	28.50	37.50
41/2	11.0			20.50	29.70	39.00
5	11.			21.40	30.90	40.50
$5\frac{1}{2}$	12.			22.30	32.10	42.00
6	12.			23.20	33.30	43.50
$6^{1/2}$	13.			24.10	34.50	45.00
7	13.			25.00	35.70	46.50
$7\frac{1}{2}$	14.			25.90	36.90	48.00
8	14.			26.80	38.10	49.50
9	15.			28.60	40.50	52.50
10	17.			30.40	42.90	55.50
11	18.			32.20	45.30	58.50
12	19.3	25 25 .	40	34.00	47.70	61.50

Machine Bolt Extras

Price, with Hexagon Heads......per cent 10

"Both Hexagon Head and Nuts.... 20

Special bolts with irregular thread and unusual dimensions

Special bolts with irregular thread and unusual dimensions of heads or nuts, will be charged extra at the discretion of the manufacturer.

Directions for Ordering Machine Bolts

In ordering machine bolts, specify whether cut or rolled thread is wanted. Hexagon head machine bolts are not made in rolled thread.

Standard Lengths of Threads on Bolts

Size			-LENGTH BO	l/rs, Inches-		
In.	1 to 11/4	11/2 to 4	41/4 to 7	71/4 to 12	121/4 to 20	20 to 30
1/4	8/4	7/8	1 .	11/6		
5/16	3/4	7/8	1	71%	* * *	* * *
3/2	3/	1	11/4	11%		
7/16	3/4	ī	117	112		
1/2 & 9/16	3/4	1	11%	11%	13/	• • •
5/0	1 *	11/	116	2 4	217	
3/4	ī	11%	13/	2	217	216
7/2		11%	13/	2	214	21/2
1′°		11%	137	2	214	23/
11/0		-/4	217	21/6	3 2	33/
11%		• • •	212	23/	31/	28/
- /4			-/2	2/4	074	374

For 125 Pounds Steam Working Pressure

90° Elbows



All standard weight fittings have plain faces.

Bolt holes will be drilled \(\frac{1}{8} \) inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only unless otherwise ordered.

	Diameter	Center	PRICE.	EACH-
Size Inches	Flanges	to Face	Faced	Faced and
	Inches	Inches	Only	Drilled
11/4	41/2	$3\frac{3}{4}$	\$3.00	\$3.60
11/2	5	4	3.00	3.60
2	6	$4\frac{1}{2}$	3.00	3.60
21/2	7	5	3.15	3.75
3	71/2	51/2	3.45	4.15
31/2	81/2	6	4.05	4.90
4	9	$6\frac{1}{2}$	4.50	5.50
41/2	$9\frac{1}{4}$	7	5.50	6.50
5	10	$7\frac{1}{2}$	6.25	7.25
6	11	8	7.60	8.90
7	121/2	81/2	10.50	12.00
8	$13\frac{1}{2}$	9 2	12.00	13.60
9	15	10	17.00	19.25
10	16	11	19.00	21.70
12	19	12	28.00	31.00
14	21	14	41.50	
15	221/4	141/2		45.25
16	231/2	15^{1472}	47.00	51.50
18	$\frac{25}{25}$	161/	54.50	59.50
20	271/2	$16\frac{1}{2}$	71.00	77.00
22	/ 20	18	90.00	97.00
24	$\frac{291}{2}$	20	113.00	122.00
	32	22	140.00	150.00
Larger	sizes made to	order F	Prices upon applica	ion

Larger sizes made to order. Prices upon application.

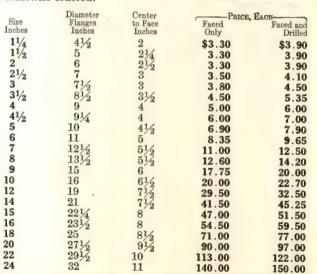
45° Elbows

All standard weight fittings have plain faces.

Bolt holes will be drilled ½ inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.



Larger sizes made to order. Prices upon application.

Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

Reducing Taper Elbows



Standard reducing elbows carry the same dimensions, center to face, as regular elbows of largest straight size.

All standard weight fittings have plain faces.

Bolt holes will be drilled 1/8-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Flanged fittings will be furnished faced only, unless otherwise specified.

			Wast opecar	2041	
CI.		Diameter	Center	PRICE	EACH-
Size Inche	4	Flanges Inches	to Face Inches	Faced	Faced and
		_		Only	Drilled
-	11/	9 x 6	5	\$6.30	\$6.90
-	11/2	7½x 5	$5\frac{1}{2}$	6.90	7.60
3 x	2	7½x 6	$5\frac{1}{2}$	6.90	7.60
3 x	21/2	7½x 7	$5\frac{1}{2}$	6.90	7.60
	2	8½x 6	6	8.10	8.95
31/2X	$2\frac{1}{2}$	$8\frac{1}{2}x$ 7	6	8.10	8.95
31/2X	3	$8\frac{1}{2}$ x $7\frac{1}{2}$	6	8.10	8.95
4 x	2	9 x 6	$6\frac{1}{2}$	9.00	10.00
4 x	$2\frac{1}{2}$	9 x 7	61/2	9.00	10.00
4 x	3	9 x $7\frac{1}{2}$	$6\frac{1}{2}$	9.00	10.00
4 x	31/2	$9 \times 8\frac{1}{9}$	$6\frac{1}{2}$	9.00	10.00
41/2X	$2\frac{1}{2}$	$9\frac{1}{4}$ x 7	7 2	11.00	12.00
41/2X	31/2	$9\frac{1}{4}$ x $8\frac{1}{2}$	7	11.00	12.00
$4\frac{1}{2}X$ $4\frac{1}{2}X$ $4\frac{1}{2}X$	4	91/4x 9	7	11.00	12.00
5 x	21/2	10 x 7	71/2	12.50	12.00
5 x	3	10 x 7½	$7\frac{1}{2}$		13.50
	4		$7\frac{72}{12}$	12.50	13.50
6 x	21/2			12.50	13.50
	2 7/2		8	15.25	16.55
	3	11 x 7½	8	15.25	16.55
6 X	$3\frac{1}{2}$	11 x 8½	8	15.25	16.55
6 x	4	11 x 9	8	15.25	16.55
	5	11 x10	8	15.25	16.55
7 x	5	$12\frac{1}{2}$ x10	81/2	21.00	22.50
	6	$12\frac{1}{2}$ x11	$8\frac{1}{2}$	21.00	22.50
	3	13½x 7½	9	24.00	25.60
8 x	$3\frac{1}{2}$	$13\frac{1}{2}$ x $8\frac{1}{2}$ $13\frac{1}{2}$ x 9	9	24.00	25.60
8 x	4	$13\frac{1}{2}x 9$	9	24.00	25.60
8 x	5	13½x10	9	24.00	25.60
8 x	6	$13\frac{1}{2}$ x11	9	24.00	25.60
8 x	7	$13\frac{1}{2}$ x $12\frac{1}{2}$	9	24.00	25.60
9 x	6	15 x11	10	34.00	36.25
	8	15 x13½	10	34.00	
	41/2	$16 \times 9\frac{1}{4}$	11	38.00	36.25
	5	16 x10	11	38.00	40.70
	6	16 x11	11		40.70
	7	16 x12½	11	38.00 38.00	40.70
	8	$\frac{16}{16} \times \frac{13\frac{1}{2}}{2}$	11		40.70
	9	16 x15	11	38.00	40.70
	6	19 x11	12	38.00	40.70
	7	19 x12½		56.00	59.00
12 x		10 -121/	12	56.00	59.00
		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12	56.00	59.00
			12	56.00	59.00
14 x1		21 x16	14	70.00	73.75
14 x1		21 x19	14	70.00	73.75
15 x1		$22\frac{1}{4} \times 16$	$14\frac{1}{2}$	80.00	84.50
15 x1		22½x19	141/2	80.00	84.50
16 x1		23½x19	15	90.00	95.00
16 x1		$23\frac{1}{2}$ x21	15	90.00	95.00
16 x1		$23\frac{1}{2}$ x $22\frac{1}{4}$	15	90.00	95.00
18 x1	5	$25 \times 22\frac{1}{4}$	$16\frac{1}{2}$	105.00	111.00
18 x1		$25 \text{ x} 23\frac{1}{2}$	$16\frac{1}{2}$	105.00	111.00
20 x1	4	27½x21	18	120.00	127.00
20 x1	6	$27\frac{1}{2}$ x $23\frac{1}{2}$. 18	120.00	127.00
20 x1	8	$27\frac{1}{2}$ x25	18	120.00	127.00
					221.00

Elbows not listed above will be made to order at a special price.

125 Pounds Steam Working Pressure

Long Radius Elbows



All standard weight fittings have plain faces. Bolt holes will be drilled 1/8-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of

Furnished faced only unless otherwise ordered.

CI.	Diam.	Center		PRI	CE, EACH
Size	Flanges	to Face	Radius	Faced	Faced and
Inches	Inches	Inches	Inches	Only	Drilled
2	6	$6\frac{1}{2}$	51/4	\$5.00	\$5.90
21/2	7	7	$5\frac{5}{8}$	5.25	6.15
3	71/2	73/4	61/4	5.75	6.85
31/2	81/2	81/2	67%	6.75	8.00
4	9 2	9 2	73%	7.50	
41/2	91/4		73/		9.00
5		91/2	017	9.25	10.75
	10	$10\frac{1}{4}$	8/2	10.50	12.00
6	11	$11\frac{1}{2}$	95/8	12.65	14.60
7	$12\frac{1}{2}$	$12\frac{3}{4}$	$10\frac{7}{8}$	17.50	19.75
8	$13\frac{1}{2}$	14	12	20.00	22.40
9	15	151/4	13	28.50	31.85
10	16	$16\frac{1}{2}$	$14\frac{1}{8}$	31.50	35.50
12	19	19 .	161/2	46.50	51.00
14	21	211/2	1878	69.00	74.50
15	$22\frac{1}{4}$	2234	20	78.00	84.75
16	$23\frac{1}{2}$	24	211/4	91.00	98.50
18	25	$26\frac{1}{2}$	$32\frac{5}{8}$	118.00	127.00
20	271/2	29	26	150.00	160.00
22	$291\frac{7}{2}$	311/2	283/4	190.00	203.00
24	32	34	3034	235.00	250.00
	ger sizes made		Elbarra	-£ 3:654	

Larger sizes made to order. Elbows of different dimensions from above furnished on order at special prices.

Round Base Elbows

The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

All standard weight fittings have plain faces. Bolt holes will be drilled height hard larger than diameter of bolts.

Size of all fittings scheduled in-

dicates inside diameter of ports.
Furnished faced only, except
base, as quoted unless otherwise ordered.



			Diam.		-PRICE, EACH	1
O.	Diameter	Center	Base		Faced	For Facing
Size	*Flanges	to Face	Flange	Faced	and	and Drilling
Inches	Inches	Inches	Inches	Only	Drilled	Base Flange
4	9	$6\frac{1}{2}$	6	\$9.00	\$10.00	\$3.00
41/2	$9\frac{1}{4}$	7	6	11.00	12.00	3.00
5	10	$7\frac{1}{2}$	7	12.50	13.50	3.50
6	11	8 "	7	15.25	16.55	3.50
7	121/2	81/2	7	21.00	22.50	3.50
8	131/2	9	9	24.00	25.60	5.00
9						
-	15	10	9	34.00	36.25	5.00
10	16	11	9	38.00	40.70	5.00
12	19	12	11	56.00	59.00	7.50
14	21	14	11	70.00	73.75	7.50
15	221/4	141/2	11	80.00	84.50	7.50
16	231/2	15	11	90.00	95.00	7.50
18	25	161/2	131/2	105.00	111.00	12.00
20	$27\frac{1}{2}$	18	$13\frac{1}{2}$	120.00	127.00	12.00
22 .	291/2	20	131/2	150.00	159.00	12.00
24	32	22	$13\frac{1}{2}$	190.00	200.00	12.00
	0	and and	10/2	130.00	200.00	12.00

*Port openings only, not base flange.

Base Tees

Base tees made on special order. Prices upon application.

Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure

Straight Side Outlet Elbows



All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

CI.	Diameter	Center	PRICE	EACH—
Sise Inches	Flanges Inches	to Face Inches	Faced Only	Faced and Drilled
4	9	$6\frac{1}{2}$	\$26.50	\$28.00
5	10	$7\frac{1}{2}$	28.50	30.00
6	11	8	33.00	35.00
7	$12\frac{1}{2}$	$8\frac{1}{2}$	40.25	42.50
8	$13\frac{1}{2}$	9	47.50	50.00
10	16	11	76.00	80.00
12	19	12	100.50	105.00
14	21	14	129.50	135.00
16	$23\frac{1}{2}$	15	152.50	160.00

Larger sizes made to order. Prices upon application.

Reducing Side Outlet Elbows



The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

a.	Diameter	Center	PRICE,	EACH
Size Inches	Flanges Inches	to Face Inches	Faced Only	Faced and
4	9	61/6	\$29.50	\$31.00
5	10	71/2	31.50	33.00
6	11	8	36.00	38.00
7	$12\frac{1}{2}$	$8\frac{1}{2}$	44.75	47.00
8	$13\frac{1}{2}$	9	52.50	55.00
10	16	11	84.00	88.00
12 14	$\begin{array}{c} 19 \\ 21 \end{array}$	12	110.50	115.00
16	$\frac{21}{23\frac{1}{2}}$	14	144.50	150.00
	2072 mainan 1- 4	15	167.50	175.00

Larger sizes made to order. Prices upon application.

For 125 Pounds Steam Working Pressure

Straight Double Branch Elbows



All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.
Size of all fittings scheduled indicates inside diameter of

ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	Faced Only	Faced and Drilled
4 5	$\begin{smallmatrix} 9\\10\end{smallmatrix}$	$\frac{6\frac{1}{2}}{7\frac{1}{2}}$	\$28.50 36.00	\$30.00 37.50
6 7	$\begin{array}{c} 11 \\ 12\frac{1}{2} \end{array}$	81/2	38.00 42.75	40.00 45.00
8	$\frac{13\frac{1}{2}}{16}$	9	47.50 66.00	50.00 70.00
12 14	19 21	12 14	90.50 119.50	95.00 125.00
16	23/2	15	142.50	150.00

Larger sizes made to order. Prices upon application.

Reducing Double Branch Elbows Reducing on the Branches Same Size



The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of

Furnished faced only, unless otherwise ordered.

	Diameter	Center	PRICE,	Each-
Size Inches	Flanges Inches	to Face Inches	Faced Only	Faced and Drilled
4	9	$6\frac{1}{2}$	\$31.50	\$33.00
5	10	$7\frac{1}{2}$	39.50	41.00
6	11	8	42.00	44.00
7	$12\frac{1}{2}$	81/2	47.75	50.00
8	131/2	9	52.50	55.00
10 12	16	11	73.50	77.50
14	19	12	100.50	105.00
16	091/	14	132.50	138.00
10	40/2	15	157.50	165.00

Larger sizes made to order. Prices upon application,

Standard Cast Iron Flanged Fittings For 125 Pounds Steam Working Pressure







Reducing

All reducing tees, 16 inches and smaller, take the same center to face dimensions as straight size tees of larger port. All tees reducing on the run only take the same dimensions center to face as the largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on the size of outlet.

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All standard weight fittings have plain faces.

Bolt holes will be drilled 1/8 inch larger than diameter of

Size of all fittings scheduled indicates inside diameter of

Furnished faced only, unless otherwise ordered.

Stra	iaht	Tees
2616		

		Straight !	ees	
CI.	Diameter	Center	PRICE	EACH -
Sine	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
11/4	$4\frac{1}{2}$	$3\frac{3}{4}$	\$4.35	\$5.25
11/2	5	4	4.35	5.25
2	-6	41/2	4.35	5.25
21/2	7	5	4.55	5.45
3	71/2	$5\frac{1}{2}$	5.00	6.10
$3^{1/2}$	81/2	6	5.85	
4	9 2	61/2		7.10
41/2	01/	0/2	6.50	8.00
472	91/4	7	8.00	9.50
5	10	71/2	9.10	10.60
6	11	8	11.00	12.95
7	$12\frac{1}{2}$	81/2	15.25	17.50
8	$13\frac{1}{2}$	9	17.40	19.80
9	15	10	24.65	28.00
10	16	11	27.50	31.50
12	19	12	40.50	45.00
14	21	14	60.00	
15	221/4	141/2		65.50
16	231/2		68.00	74.75
18	$\frac{25}{25}$	15	79.00	86.50
		$16\frac{1}{2}$	103.00	112.00
20	$27\frac{1}{2}$	18	130.00	140.00
22	$29\frac{1}{2}$	20	164.00	177.00
24	32	22	203.00	218.00
		Reducing 1	Tees	
11/2	5	4		AF 00
2	6	41/2	\$5.00	\$5.90
21/	7	4/2	5.00	5.90
21/2		5	5.25	6.15
3	71/2	$5\frac{1}{2}$	5.75	6.85
31/2	$8\frac{1}{2}$	6	6.75	8.00
4	9	$6\frac{1}{2}$	7.50	9.00
$4^{1/2}$	$9\frac{1}{4}$	7	9.25	10.75
5	10	71/2	10.50	12.00
6	11	8	12.65	14.60
7	$12\frac{1}{2}$	81/2	17.50	19.75
8	131/2	9 2	20.00	22.40
9	15	10	28.50	21.40
10	16	11		31.85
12	19	$\frac{11}{12}$	31.50	35.50
14	21		46.50	51.00
		14	69.00	74.50
15	221/4	$14\frac{1}{2}$	78.00	84.75
16	$23\frac{1}{2}$	15	91.00	98.50
18	25	161/2	118.00	127.00
20	271/2	18	150.00	160.00
22	9017	0.0	100 00	222

Larger sizes made to order. Prices upon application.

189.00

233.00

202.00

248.00

125 Pounds Steam Working Pressure



Straight Single Sweep Tees

All standard weight fittings have plain faces.

Bolt holes will be drilled 1/8 inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

	Diameter	Center	PRICE,	EACH-
Size	Flanges	to Face	Faced	Fared and
Inches	Inches	Inches	Only	Drilled
2	6	$4\frac{1}{2}$	\$5.00	\$5.90
21/2	7	5	5.25	6.15
3	71/2	$5\frac{1}{2}$	5.75	6.85
31/2	81/2	6	6.75	8.00
4	9 2	61/2	7.50	9.00
41/2	91/4	7 ~	9.25	10.75
5	10	71/2	10.50	12.00
5 6 7 8 9	11	8	12.65	14.60
7	$12\frac{1}{2}$	81/2	17.50	19.75
8	131/2	9	20.00	22.40
o o	15	10	28.50	31.85
10	16	11		
			31.50	35.50
12	19	12	46.50	51.00
14	21	14	69.00	74.50
15	221/4	$14\frac{1}{2}$	78.00	84.75
16	231/2	15	91.00	98.50
18	25	$16\frac{1}{2}$	118.00	127.00
20	271/2	18	150.00	160.00
22	291/2	20	189.00	202.00
24	32	22	233.00	248.00
	sizes made to		Prices upon applica	

Reducing Single Sweep Tees Reducing in Run or Branch

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on size of reduced outlet.

Reducing single sweep tees made to order only. Single sweep tees with side openings larger than run, not made.

All standard weight fittings have plain faces.

Bolt holes are drilled $\frac{1}{8}$ inch larger in diameter than diameters of bolts.

Sizes of all fittings scheduled indicate the inside diameters of ports. Furnished faced only, unless otherwise ordered.

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_	Diameter	Center	Pric	E, EACH
Size	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
21/2	7	5	\$6.00	\$6.90
3 2	71/6	51/2	6.60	7.70
31/2	81%	6	7.75	9.00
4	9 2		8.65	
		$\frac{61}{2}$		10.15
$4^{1/2}$	91/4	7	10,60	12.10
5	10	$7\frac{1}{2}$	12.00	13.50
6	11	8	14.50	16.45
5 6 7	$12\frac{1}{2}$	81/2	20.00	22.25
	$13\frac{1}{2}$	9	23.00	25.40
8	15	10	32.75	36.10
10	16	11	36.00	40.00
12	19	12	53.50	58.00
14	21	14	79.00	84.50
15	221/4	141/2	90.00	96.75
16	231/2	15	105.00	112.50
	25	$16\frac{1}{2}$	135.00	
18				144.00
20	271/2	18	173.00	183.00
22	$29\frac{1}{2}$	20	217.00	230.00
24	32	22	268.00	283.00
7		, y m		

Larger sizes made to order. Prices upon application.

Standard Cast Iron Flanged Fittings

For 125 Pounds Steam Working Pressure



Straight Double Sweep Tees

All standard weight fittings have plain faces.

Bolt holes will be drilled 1/8 inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only unless otherwise ordered.

CO.	Diameter	Center		EACH-
Sise Inches	Flanges Inches	to Face Inches	Faced	Faced and
11/4	41/2	33/4	Only \$5.00	Drilled
11/2	5	A 74.	5.00	\$5.90
2 /2	6	41/2	5.00	5.90
2 2½	7	5		5.90
3	71/		5.25	6.15
31/2	912	$\frac{51}{2}$	5.75	6.85
3-72	9		6.75	8.00
41/		$\frac{61}{2}$	7.50	9.00
4/2	91/4		9.25	10.75
5	10	71/2	10.50	12.00
41/ ₂ 5 6 7 8	11	8	12.65	14.60
7	$12\frac{1}{2}$	81/2	17.50	19.75
8	$13\frac{1}{2}$	9	20.00	22.40
9	15	10	28.50	31.85
10	16	11	31.50	35.50
12	19	12	46.50	51.00
14	21	14	69.00	74.50
15	$22\frac{1}{4}$	$14\frac{1}{2}$	78.00	84.75
16	$23\frac{1}{2}$	15	91.00	98.50
18	25	$16\frac{1}{2}$	118.00	127.00
20	$27\frac{1}{2}$	18	150.00	160.00
22	291/2	20	189.00	202.00
24	32	22	233.00	248.00
Larger si	izes made t	o order. Pric	es upon applica	tion.

Reducing Double Sweep Tees

Reducing in Branch Only

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port. Tees, sizes 18 inches and larger

Tees, sizes 18 inches and larger reducing on outlet, are made in two lengths, depending on size of outlet.

Double sweep tees not made reducing on run.

All standard weight fittings have plain faces.

Bolt holes are drilled ½ inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Furnished faced only, unless otherwise ordered.

T. CILLIA	dea facea of	my, unicos ou	der wise ordered.	
	Diameter	Center	PRICE,	EACH -
Size	Flange	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
2	6	41/2	\$5.75	\$6.65
21/2	7	5 .	6.00	6.90
3	71/2	$5\frac{1}{2}$	6.60	7.70
31/2	812	. 6	7.75	9.00
	072			
4	9	$6\frac{1}{2}$	8.65	10.15
41/2	91/4	7	10.60	12.10
5	10	$7\frac{1}{2}$	12.00	13.50
6	11	8 2		
0			14.50	16.45
7	$12\frac{1}{2}$	81/2	20.00	22.25
6 7 8	$13\frac{1}{2}$	9	23.00	25.40
9	15	10	32.75	36.10
10	. 16	11	36.00	40.00
12	19	12	53.50	58.00
14	21	14	79.00	84.50
15	$22\frac{1}{4}$	141/2	90.00	96.75
16	$23\frac{1}{2}$	15	105.00	112.50
18	25	$16\frac{1}{2}$	135.00	144.00
20	271/2	18	173.00	183.00
22	$29\frac{1}{2}$	20	217.00	230.00
24	32	22	268.00	283.00
Larger	sizes made	to order. Pri	ces upon applicat	ion.
0		4	the state of the s	

For 125 Pounds Steam Working Pressure

Straight Side Outlet or Four Way Tees



All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size	Diameter	Center	PRICE,	EACH-
Inches ,	Flanges Inches	to Face Inches	Faced Only	Faced and Drilled
4	9	$6\frac{1}{2}$	\$31.00	\$33.00
5	10	$7\frac{1}{2}$	35.00	37.00
6	11	8	42.25	45.00
7	$12\frac{1}{2}$	$8\frac{1}{2}$	49.50	52.50
8	$13\frac{1}{2}$	9	56.75	60.00
10	16	11	84.50	90.00
12	19	12	114.00	120.00
14	21	14	142.50	150.00
16	$23\frac{1}{2}$	15	170.00	180.00
-				

Larger sizes made to order. Prices upon application.

Reducing Side Outlet or Four Way Tees



The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Fittings reducing on the run only, the long body pattern will always be used.

Size outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All standard weight fittings have plain faces. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

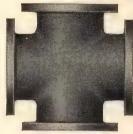
Size of all fittings scheduled indicates inside diameter of

Furnished faced only, unless otherwise ordered.

				•
Size Inches	Diameter Flanges Inches	Center to Face Inches	Faced Only	Faced and Drilled
4 5	9 10	$\frac{61/2}{71/2}$	\$34.00 39.00	\$36.00 41.00
6	11 121/2	8 2 8½	47.25 55.00	50.06
8	$\frac{131_{2}}{16}$	9 2 11	62.75 94.50	58.00 66.00
12 14	19 21	$\begin{array}{c} 11\\12\\14\end{array}$	126.00 157.00	100.00 132.00
16	231/2	15	190.00	165.00 200.00

Larger sizes made to order. Prices upon application.

Standard Cast Iron Flanged Fittings For 125 Pounds Steam Working Pressure



Straight Crosses

All standard weight fittings have plain faces.

Bolt holes will be drilled 1/8 inch larger than diameter of

Size of all fittings scheduled indicates inside diameter of

Furnished faced only unless otherwise ordered.

	Diameter Ce	nter	-PRICE, EACH-	_
Size		Face Fac	ed Faced a	
Inches		ches On	* .	
11/4		³ / ₄ \$6.	75 \$7.9	95
11/2	5 4	6.	75 7.9	95
2	6 4	6.	75 7.9	95
21/2	7 5	6.5		
3	$7\frac{1}{2}$ 5	7.0		
31/2	81/2 6	9.0		
4	9 6			
$4^{1/2}$	91/4 7	12.0		
	10 7	/2 13.7		
6	11 8	16.7		
7	$12\frac{1}{2}$ 81			
	131/2 9	26.5		
	15 10	37.5		
	16 11	42.0		
	19 12	61.5		-
	21 14	91.0		
	221/4 141			
	$23\frac{1}{2}$ 15	120.0		
	25 161			
	- / 4	198.0		
	$\frac{291}{2}$ $\frac{20}{20}$	248.0		
	32 22	Prices upon ex		0

Larger sizes made to order. Prices upon application.

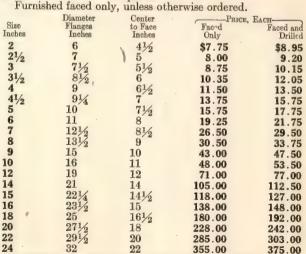
Reducing Crosses

All reducing crosses, 16 inches and smaller, take same center to face dimensions as straight size crosses of largest port. crosses reducing on run only take same dimensions center to face. as largest straight size. Sizes 18 inches and larger, reducing on the outlet, are made in two lengths depending on size of outlet.

All standard weight fittings have plain faces. Bolt holes are drilled ½ inch larger in diam-

eter than diameter of bolts. Sizes of all fittings scheduled indicate inside diameter of ports.

Furnished faced only, unless otherwise ordered.



Larger sizes made to order. Prices upon application.

Standard Cast Iron Flanged Fittings 125 Pounds Steam Working Pressure Straight Y Branches or Laterals



All standard weight fittings have plain faces.

Bolt holes will be drilled %-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size	Diameter Flanges	Center to Face and Face to	Faced PRICE,	Each Faced and
Inches	Inches	Face, Inches	Only	Drilled
2	6		\$6.75	\$7.95
21/2	7		6.95	8.15
3′-	71/2		7.65	9.05
31/2	81/2		9.00	10.70
4	9		10.00	12.00
41/2	91/4	بية	12.00	14.00
5	10	25	13.75	15.75
4 4 ¹ / ₂ 5 6 7 8 9	11	Furnished on request	16.75	19.25
7	$12\frac{1}{2}$	re Fe	23.00	26.00
8	$13\frac{1}{2}$	g	26.50	29.75
9	15	75	37.50	42.00
10	16	je	42.00 °	47.50
12	19	28	61.50	67.50
14	21	E	91.00	98.50
15	$22\frac{1}{4}$	E.	103.00	112.00
16	$23\frac{1}{2}$		120.00	130.00
18	25		157.00	169.00
20	$27\frac{1}{2}$		198.00	212.00
22	$29\frac{1}{2}$		248.00	266.00
24	32		310.00	330.00
Larger size	s made to	order. Prices up	oon application	n.

Reducing Y Branches or Laterals

Reducing in Run or Branch All Y Branches or laterals reducing on run only have same dimensions, face to face, as straight size laterals. All reducing Y branches or laterals, 16 inches and smaller, have same dimensions as same sizes in straight size fittings.

Sizes 18 inches and up, reducing on branch, are made in long or short body pattern, depending on size of branch. All standard weight fittings have

plain faces. Bolt holes are drilled \%-inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate inside diameter of ports. Furnished faced only unless otherwise ordered

I u	maneu laceu om		MISC OLUCIEC	
CI)	Diameter	Center to Face		ICE, EACH
Size	Flanges	and Face to	Faced	Faced and
Inches	Inches	Face, Inches	Only	Drilled
2	6		/ \$7.75	\$8.95
21/2	7		8.00	9.20
3	71/6		8.75	10.15
31/2	81%		10.35	12.05
4	9 2		11.50	13.50
41/				
4/2	$9\frac{1}{4}$	45	13.75	15.75
5	10	ag .	15.75	17.75
6	11	Ę'	19.25	21.75
7	$12\frac{1}{2}$	F.	26.50	29.50
8	$13\frac{1}{2}$	덮	30.50	33.75
4½ 5 6 7 8	15	Furnished on request	43.00	47.50
10	16	.99	48.00	53.50
12	19	-8	71.00	
		·ä		77.00
14	21	=	105.00	112.00
15	$22\frac{1}{4}$	E	118.00	127.00
16	$23\frac{1}{2}$		138.00	148.00
18	25		180.00	192.00
20	$27\frac{1}{2}$		228.00	242.00
22	$29\frac{1}{2}$		285.00	303.00
24	3		355.00	375.00
-		a and an Data		
Lai	ger sizes made t	o order. Pric	es upon appl	ucațion,

Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

Standard Taper Reducers



All standard weight fittings have plain faces

Bolt holes will be drilled 1/8 inch larger in diameter than bolt diameter.

Sizes of all fittings scheduled indicates inside diameter of ports. The face to face dimensions standard or eccentric will be the same.

Furnished faced only unless other-

wise ordered.

			**	200 02 0404			
		n	ameter	Face		PRICE, 1	Exce
8	ize		langes	to Face	Fac		Faced and
	ches	T	nches	Inches			Drilled
3	x 2	71	2x 6	6	\$6.	90	\$7.60
31	/2x 2	1/2 81	2x 7	61/2	8	10	8.95
		9	x 6	7			
4				4		.00	10.00
4	x 2	1/2 9	x 7	7	9.	.00	10.00
4	ж 3	9	x 7½	7		.00	10.00
				7 8			
5	x 2	10	x 6	0	12.		13.50
5	x 2	1/2 10	\times 7	8	12.	50	13.50
5	x 3	10	$x 7\frac{1}{2}$	8	12.	50	13.50
5				8	10	50	
		10	x 9	0	12	30	13.50
6	x 3	11	$x 7\frac{1}{2}$	9	15.		16.55
6	x 3	1/2 11	x 81/2	9	15.	25	16.55
6	x 4	11		9	15	25	
					15.		16.55
6	x 5	11	x10	9	15.	25	16.55
7	x 3	121	$2x 7\frac{1}{2}$	10	21.	00	22.50
7	x 4	12	6x 9	10			22.50
		147	2x 3		21.		
7	x 5	125	2x10	10	21.	.00	22.50
7	x 6	12^{1}	2x11	10	21.	00	22.50
8	x 3	131	6x 71/2	11	24.		25.60
		107	24 172				
8	x 4	131	2x 9	11	24.		25.60
8	x 5	13!	√2x10	11	24.	00	25.60
8	x 6	121	2x11	11	24.		25.60
10	x 4	16	x 9	12	38.	.00	40.70
10	x 4	16	x10	12	38.	00	40.70
10	x 6	16	x11	12	38.		40.70
10	x 8	16	$x13\frac{1}{2}$	12	38.		40.70
12	x 5	19	x10	14	56.	00	59.00
12	x 6	19	x11	14	56.		59.00
12	x 8						
		19	$x13\frac{1}{2}$	14	56.		59.90
12	x10	19	x16	14	56.	.00	59.00
14	x 6	21	x11	16	70 .		73.75
14	x 8	21		16			
			$x13\frac{1}{2}$		70.		73.75
14	x10	21	x16	16	70.	00	73.75
14	x12	21	x19	16	70 .	00	73.75
15	x 8			17			
		247	$4x13\frac{1}{2}$		80.		84.50
15	x10	227	4x16	17	80.	.00	84.50
15	x12	22^{1}	4x19	17	80.	00	84.50
15	x14	991	4x21	17	80.		84.50
16		021	/191/				
-	x 8	23	2x13½	18	90 .		95.00
16	x10	231	2x16	18	90.	00	95.00
16	x12	231	√2x19	18	90.	00	95.00
16	x14	921	2x21				
			2441	18	90.		95.00
18	x10	25	x16	19	105.		111.00
18	x12	25	x19	19	105.	00	111.00
18	x14	25	x21	19	105.		
							111.00
18	x16	25	$x23\frac{1}{2}$	19	105.		111.00
20	x12	27^{1}	2x19	20	120.	00	127.00
20	x14	271	6x21	20	120		127.00
20		971	/w001/				
	x16	217	2x23½	20	120.		127.00
20	x18	27	2X20	20	120 .	00	127.00
22	x14	291	2x21	22	150.		159.00
22	x16	201	6v921/	22			
		207	2^{2} 2^{3} 2^{1}		150.		159.00
22	x18	291	2x25	22	150.	00	159.00
22	x20	291	6x271/2	22	150.		159.00
24	x16	32	x231/2	24	190		
							200.00
24	x18	32	x25	24	190 .	00	200.00
24	x20	32	$x27\frac{1}{2}$	24	190.	00	200.00
24	x22	32	$x29\frac{1}{2}$	$\overline{24}$	190.		200,00
	_	_					
1	aper	reducers o	any of	ner anne	msions spe	ciai on	orger.

Eccentric Taper Reducers

Eccentric taper reducers furnished on special order. Prices upon application,

Standard Companion Flanges

125 Pounds Steam Working Pressure





Back View, Showing Hub

Smooth Face



Bline	Fla	nge
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	_	Cast	ron	Flanges		
Size		EACH			PRICE.	EACH
Inches	Faced Only	Faced and		Size	Faced	Faced and
		Drilled		Inches	Only	Drilled
1 x 4	\$.55	\$.80		$8x13\frac{1}{2}$	\$3.10	\$3.80
11/4x 41/2	. 60	.85		9x15	3.85	4.65
$1\frac{1}{2} \times 5$. 65	.90		10x16		
2 x 6	.75	1.00		12x19	4.50	5.50
2½x 7	.85	1.10			6.50	7.65
3 x 7½	.95			14x21	9.00	10.35
		1.25		$15x22\frac{1}{4}$	11.50	13.20
3½x 8½	1.20	1.55		16x23½	13.50	15.30
4 x 9	1.35	1.80		18x25	16.00	18.00
4½x 9¼	1.45	1.90		20x271/2	19.00	21.50
5 x10	1.60	2.05		$22x29\frac{1}{2}$	22.00	
6 x11	2.00	2.50		24x32		25.00
7 x12½	2.65	3.25		24X3Z	27.00	30.50
1 111/2	2.00	3.43				

Malleable Iron Flanges

Double list of cast iron flanges.

		Semi-steel	Flanges			
1 x 4	\$.70	\$1.00	8x131/2	\$3.90	\$4.75	
11/4x 41/2	.75	1.05	9x15	4.80		
1½x 5	.80	1.10	10x16	5.65	5.80	
2 x 6	. 95	1.25	12x19		6.85	
$2\frac{1}{2}x$ 7	1.05	1.35	14x21	8.15	9.55	
3 x 7½	1.20	1.55		11.25	13.00	
$3\frac{1}{2}$ x $8\frac{1}{2}$	1.50	1.95	15x22½	14.50	16.50	
4 x 9	1.70		16x23½	17.00	19.00	
4½x 9¼		2.25	18x25	20.00	22.50	
5 x10	1.80	2.35	$20x27\frac{1}{2}$	24.00	27.00	
	2.00	2.55	$22 \times 29 \frac{1}{2}$	27.50	31.00	
6 x11 7 x12½	2.50	3.10	24x32	34.00	38.00	
$7 \text{ x} 12\frac{1}{2}$	3.30	4.05				
		Cast Steel	Flanges			
1 x 4	\$5.00	\$6.50	8x131/2	\$27.00	\$32.00	
$1\frac{1}{4}$ x $4\frac{1}{2}$	5.40	7.00	9x15	29.50	35.50	
$1\frac{1}{2} \times 5$	5.90	7.50	10x16	34.50		
2 x 6	6.90		12x19		40.50	
2½x 7	7.30		14x21	46.00	53.00	
3 x 7½	8.70			55.50	63.00	
$3\frac{1}{2}$ x $8\frac{1}{2}$	12.10		$15x22\frac{1}{4}$	64.00	74.00	
4 x 9	14.80		$16x23\frac{1}{2}$	78.00	89.00	
			18x25	98.00	110.00	
$\frac{41}{2}$ x $9\frac{1}{4}$	15.80		$20x27\frac{1}{2}$	117.00	130.00	
5 x10	16.80		$22 \times 29 \frac{1}{2}$	140.00	155.00	
6 x11	20.40		24x32	165.00	180.00	
7 x12½	24.70	29.50		* * * * * * *		

Furnished with bolt holes spot faced, when ordered faced and drilled, at prices given for faced and drilled.

at prices given for faced and driffed.									
Forged Steel Flanges									
2 x 6	\$10.40	\$11.00	6x11	\$25.40	\$27.00				
$2\frac{1}{2}$ x 7	11.80	13.00	7x12½	27.20	32.00				
3 x 7½	13.70	15.00	8x131/2	32.00					
3½x 8½	17.60	19.00	9x15		35.00				
4 x 9	18.30	20.00	10x16	37.00	40.00				
4½x 9¼	20.30	22.00		45.00	48.00				
5 x10	22.30		12x19	56.00	60.00				
0 110		24.00	14x21	75.50	80.00				
0 0	Ca	st Iron	Blind Flange	S					
2 x 6	\$1.15	\$1.40	9x15	\$5.75	\$6.55				
$2\frac{1}{2}x$ 7	1.30	1.55	10x16	6.75	7.75				
3 x 7½	1.40	1.70	12x19	9.75					
3½x 8½	1.80	2.15	14x21		10.90				
4 x 9	2.00	2.45		13.50	14.85				
4½x 9¼	2.20		15x22½	17.00	18.70				
5 x10		2.65	$16x23\frac{1}{2}$	20.00	21.80				
_	2.40	2.85	18x25	24.00	26.00				
6 x11	3.00	3.50	$20x27\frac{1}{2}$	28.00	30.50				
$7 \times 12\frac{1}{2}$	4.00	4.60	$22x29\frac{1}{2}$	33.00	36.00				
8 x13½	4.60	5.30	24x32	40.00					
	*Semi-steel Blind Flances 40.00 43.50								

Semi-steel flanges, 25 per cent advance over cast iron.
*All blind flanges, 15-inch and larger are ribbed.

All flanged fittings are always furnished faced only, unless otherwise ordered.

Standard Reducing Cast Iron Companion **Flanges**

For Standard Flanged Valves and Fittings 125 Pounds Steam Working Pressure



These flanges, used in connection with straight or reducing fittings, make it possible to fill orders for reduced sizes more promptly. Customers who desire fittings reduced in this manner will please specify, "Reduce by Flanges if Necessary."

They will always be of the same thickness as the regular companion flanges of corresponding outside diameter, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges, always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to thange wanted, for instance, it a reducing riange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 15-inch O. D. flange, order a 6x15-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or 6x9-inch flange.

J		101 4 020	or oxo-men	trange.	
	Pric	CE, EACH		Pric	E, EACH
Size	Faced	Faced and	Size		Faced
Inches	Only	Drilled	Inches	Faced Only	and Drilled
11/4x 6	\$1.30	\$1.55	6x121/2		
$1\frac{1}{2}$ 6	1.30	1.55		\$4.40	\$5.00
1½x 7	1.45	1.70	6x13½ 6x15	5.10	5.80
1½x 7½	1.55	1.85		6.35	7.15
2 x 7	1.45	1.70	6x16	7.45	8.45
2 x 71/2	1.55	1.85	6x19	10.75	11.90
2 x 8½	2.00	2.35	$7x13\frac{1}{2}$	5.10	5.80
2 x 9	2.20	2.65	7x15	6.35	7.15
2 x10	2.65	3.10	7x16	7.45	8.45
2 x11	3.30		7x19	10.75	11.90
2 x13½	5.10	3.80	8x15	6.35	7.15
21/2x 71/2	1.55	5.80	8x16	7.45	8.45
21/2x 81/2	2.00	1.85	8x19	10.75	11.90
21/2x 0/2	2.20	2.35	8x21	15.00	16.35
2½x 9 2½x 9½	2.40	2.65	8x221/4	19.00	20.70
21/2×10	2.65	2.85	9x16	7.45	8.45
2½x11		3.10	9x19	10.75	11.90
2½x13½	3.30 5.10	3.80	9x21	15.00	16.35
2½x16		5.80	10x19	10.75	11.90
	7.45	8.45	10x21	15.00	16.35
3 x 8½ 3 x 9	2.00	2.35	$10x22\frac{1}{4}$	19.00	20.70
3 x 91/4	2.20	2.65	$10 \times 23^{1/2}$	22.00	23.80
3 x 3 / 4 3 x 10	2.40	2.85	12x21	15.00	16.35
	2.65	3.10	$12 \times 22^{1/4}$	19.00	20.70
	3.30	3.80	$12 \times 23^{1/2}$	22.00	23.80
3 x13½ 3 x16	5.10	5.80	12x25	26.50	28.50
	7.45	8.45	14x221/4	19.00	20.70
3½x 9	2.20	2.65	14x23 ¹ / ₂	22.00	23.80
3½x 9½	2.40	2.85	14x25	26.50	28.50
3½x10	2.65	3.10	$14 \times 27 \frac{1}{2}$	31.00	33.50
2½x11	3.30	3.80	14x32	44.00	47.50
3½x16	7.45	8.45	$15x23\frac{1}{2}$	22.00	23.80
4 x 91/4	2.40	2.85	15x25	26.50	28.50
4 x10	2.65	3.10	$15 \times 27 \frac{1}{2}$	31.00	33.50
4 x11	3.30	3.80	$15x29\frac{1}{2}$	36.00	39.00
4 x12½	4.40	5.00	16x25	26.50	28.50
4 x13½	5.10	5.80	$16x27\frac{1}{2}$	31.00	33.50
4 x16	7.45	8.45	$16x29\frac{1}{2}$	36.00	39.00
$4\frac{1}{2}$ x10	2.65	3.10	16x32	44.00	47.50
4½x11	3.30	3.80	$18x27\frac{1}{2}$	31.00	33.50
$4\frac{1}{2}$ x12\frac{1}{2}	4.40	5.00	$18x29\frac{1}{2}$	36.00	39.00
5 x11	3.30	3.80	18x32	44.00	47.50
5 x121/2	4.40	5.00	20x291/2	36.00	39.00
5 x13½	5.10	5.80	20x32	44.00	47.50
5 x16	7.45	8.45			

Companion flanges are always furnished faced only, unless otherwise specified.

Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

90° Elbows



All extra heavy fittings have a raised surface for gaskets 1/16-inch high, inside of bolt holes.

Bolt holes will be drilled ½-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

		iameter	Center	PRICE.	EACH-
Size			o Face	Faced	Faced and
Inch	-	Inches	Inches	Only	Drilled
11	4	5	$4\frac{1}{4}$	\$4.50	\$5.40
11	6	6	41/2	4.50	5 40
2	_	61/2	5	4.50	5.40
21/	6	71%	51/2		
3	2 .	81/4	6	4.75	5.65
21	,			5.15	6.25
31/	2	9	$\frac{61}{2}$	6.10	7.35
4	, 1	10	7	6.75	8.25
41/	2 I	$10\frac{1}{2}$	$7\frac{1}{2}$	8.25	9.75
5		11	8	9.53	10.85
6	1	$12\frac{1}{2}$	81/2	11.40	13.40
7		14	9	15.75	18.00
8	1	15	.0	18.00	20.50
9			01/2	25.50	
10			11/2		28.85
12				28.50	32.50
			.3	42.00	46.50
14			.5	62.00	67.50
15			$5\frac{1}{2}$	70.00	77.00
16			$.61/_{2}$	82.00	90.00
18			.8	106.00	115.00
20	3	$30\frac{1}{2}$ 1	$9\frac{1}{2}$	135.00	145.00
22			201/3	170.00	183.00
24			$2^{1/2}$	210.00	
_		s made to ord		non applica	225.00
	STRUCK MIZER	CHUMOR TO OTC	HE PERODE I	man anniani	N 40 00

Larger sizes made to order. Prices upon application.

45° Elbows

All extra heavy fittings have a raised surface for gaskets \(\frac{1}{16}\)-inch high, inside of bolt holes.

Bolt holes will be drilled ½-inch larger than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.



	Diameter	Center	PRI	CE, EACH
Size	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
11/4	5	$2\frac{1}{2}$	\$5.00	\$5.90
$1\frac{1}{2}$	6	$2\frac{3}{4}$	5.00	5.90
2	$6\frac{1}{2}$	3	5.00	5.90
$2^{1/2}$	$7\frac{1}{2}$	31/2	5.25	6.15
3	$8\frac{1}{2}$	$3\frac{1}{2}$	5.65	6.75
31/2	9 -	4	6.75	8.00
4	10	41/2	7.50	9.00
41/2	101/2	41/2	9.00	10.50
5	11	5	10.35	11.85
6	$12\frac{1}{2}$	51/2	12.50	14.50
7	14	6	16.50	18.75
8	15	6	19.00	
9	161/4			21.50
10		$\frac{61}{2}$	26.75	30.10
	171/2	7	30.00	34.00
12	$\frac{201}{2}$	8	44.00	48.50
14	23	$8\frac{1}{2}$	62.00	67.50
15	$24\frac{1}{2}$	9	70.00	77.00
16	$25\frac{1}{2}$	$9\frac{1}{2}$	82.00	90.00
18	28	10	106.00	115.00
20	$30\frac{1}{2}$	$10\frac{1}{2}$	135.00	145.00
22	33	11	170.00	183.00
24	36	12	210.00	225.00
Lar	ger sizes made to	order.	Prices upon appl	

Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

Reducing Taper Elbows



Reducing elbows carry same dimensions center to face as regular elbows of largest straight size.

All extra heavy fittings have a raised surface, for gaskets 1/6 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise specified.

		D: 1	a .	993	-
	Size	Diameter	Center to Face	PRIC	E, EACH
	Inches	Flanges Inches	Inches	Faced Only	Faced and Drilled
2				-	
	x 11/4	$6\frac{1}{2}$ x 5	5	\$9.00	\$9.90
2	x 11/2	$6\frac{1}{2} \times 6$	5	9.00	9.90
21	$\frac{1}{2} \times \frac{1}{2} = \frac{1}{2}$	$7\frac{1}{2}$ x 6 $7\frac{1}{2}$ x $6\frac{1}{2}$	$5\frac{1}{2}$ $5\frac{1}{2}$	9.50	10.40
21	2x 2	$7\frac{1}{2} \times 6\frac{1}{2}$	51/2	9.50	10.40
3	x 11/2	8½x 6	6	10.25	11.35
3	x 2	$8\frac{1}{4}$ x $6\frac{1}{2}$	6	10.25	11.35
3	x 21/2	81/4x 71/2	6	10.25	11.35
21	2x 2	9 x 6½	61/	12.25	
21	$\frac{1}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{1}{2}$		$\frac{6\frac{1}{2}}{6\frac{1}{2}}$		13.50
37	$\frac{7}{2}$ x $\frac{2^{1}}{2}$ x $\frac{2^{1}}{2}$		0/2	12.25	13.50
31/	2x 3	$9 \times 8\frac{1}{4}$	$6\frac{1}{2}$	12.25	13.50
4	x 2	$10 \times 6\frac{1}{2}$	7	13.50	15.00
4	$x 2\frac{1}{2}$	$10 \times 7\frac{1}{2}$	7	13.50	15.00
4	x 3	$10 \times 8\frac{1}{4}$	7	13.50	15.00
4	$\times 3\frac{1}{2}$	10 x 9	7	13.50	15.00
5	$\times 2^{1/2}$	11 x 7½	8	18.75	20.25
5	x 3	11 x 8½	8	18.75	20.25
5	x 4	11 x10	8	18.75	20.25
6	x 3	12½x 8¼	81/2	22.75	
6		$12\frac{1}{2}$ 8 9	012		24.75
	$x \ 3\frac{1}{2}$	14/2X 9	81/2	22.75	24.75
6	x 4	$12\frac{1}{2}$ x10	81/2	22.75	24.75
6	$\times 4^{1/2}$	$12\frac{1}{2}$ x $10\frac{1}{2}$	$8\frac{1}{2}$ $8\frac{1}{2}$	22.75	24.75
6	x 5	$12\frac{1}{2}$ x11	$8\frac{1}{2}$	22.75	24.75
7	x 4	14 x10	9	31.50	33.75
7	x 5	14 x11	9	31.50	33.75
7	x 6	$14 \times 12\frac{1}{2}$	9	31.50	33.75
8	x 4	15 x10	10	36.00	38.50
8	x 5	15 x11	10	36.00	38.50
8	x 6	15 x12½	10	36.00	38.50
8	x 7	15 x14	10	36.00	
10	x 5	17½x11	111/2		38.50
10	-		111/2	57.00	61.00
10		$17\frac{1}{2}$ x $12\frac{1}{2}$	$11\frac{1}{2}$	57.00	61.00
10	x 7	17½x14	$11\frac{1}{2}$	57.00	61.00
10	x 8	$17\frac{1}{2}$ x15	$11\frac{1}{2}$	57.00	61.00
12	x 7	$20\frac{1}{2}$ x14	13	84.00	88.50
12	x 8	$20\frac{1}{2}$ x15	13	84.00	88.50
12	x 9	$20\frac{1}{2}$ x $16\frac{1}{4}$	13	84.00	88.50
12	x10	$20\frac{1}{2}$ x $17\frac{1}{2}$	13	84.00	88.50
.4	x 6	23 x12½	15	105.00	110.50
14	x10	23 x17½	15	105.00	110.50
14	x12	23 x20½	15	105.00	110.50
15	x 6	24½x12½	151/2	120.00	127.00
15	x10	24½x17½	$15\frac{1}{2}$	120.00	127.00
15	x12	$24\frac{1}{2}x20\frac{1}{2}$	$15\frac{1}{2}$		
16	x 8	$\frac{2472 \times 2072}{2512 \times 15}$		120.00	127.00
		20 /2X10 051/171/	$16\frac{1}{2}$	135.00	143.00
16	x10	25½x17½	$16\frac{1}{2}$	135.00	143.00
16	x12	$25\frac{1}{2}$ x $20\frac{1}{2}$	$16\frac{1}{2}$	135.00	143.00
16	x14	$25\frac{1}{2}$ x23	$16\frac{1}{2}$	135.00	143.00

Elbows not listed above will be made to order at a special price.

Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

Long Radius Elbows



All extra heavy fittings have a raised surface, for gaskets ½-inch high, inside of bolt holes.

Bolt holes will be drilled ½-inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size	Diameter	Center		PRICE.	EACH-
Inches	Flanges Inches	to Face Inches	Radius Inches	Faced Only	Faced and
2	$6\frac{1}{2}$	$6\frac{1}{2}$	51/4	\$7.50	Drilled
21/2	$7\frac{1}{2}$	7 2	55/8	8.00	\$8.85 9.35
3	81/4	73/4	$6\frac{1}{4}$	8.60	10.25
31/2	9	81/2	67/8	10.25	12.15
4	10	9	73/8	11.25	13.50
41/2	$10\frac{1}{2}$	$9\frac{1}{2}$	73/4	13.75	16.00
5	11	$10\frac{1}{4}$	81/2	15.50	17.75
7	$\frac{12\frac{1}{2}}{14}$	111/2	95/8	19.00	22.00
8	14 15	$\frac{12\sqrt[3]{4}}{14}$	$10\frac{7}{8}$	26.50	29.85
9	$16\frac{1}{4}$	151/4	12	30.00	33.75
10	1713	$16\frac{1}{2}$	$\frac{13}{14\frac{1}{8}}$	42.50	47.50
12	201/2	19	161/2	47.75 70.00	53.75
14	23	$21\frac{1}{2}$	187/8	103.50	76.75 111.75
15	241/2	2234	20	117.00	127.00
16	$25\frac{1}{2}$	24	211/4	137.00	149.00
18	28	$26\frac{1}{2}$	235/8	177.00	191.00
20	$30\frac{1}{2}$	29	26	225.00	240.00
22	33	$31\frac{1}{2}$	$28\frac{3}{8}$	285.00	385.00
24	36	34	303/4	350.00	373.00
1 0 P00	TO CHECOC TOO C	lo to amilan	3311	0 1100 1 11	

Larger sizes made to order. Elbows of different dimensions from above furnished on order at special prices.

Round Base Elbows

The measurement across the flat edges of square base flange is the same as the diameter of the round base flange.

All extra heavy fittings have a raised surface, for gaskets high, inside of bolt holes.

Bolt holes will be drilled \(\frac{1}{8} \)-inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, except base, as quoted unless otherwise ordered.

	70.1		Diameter		-PRICE, EACH	
CI:	Diameter	Center	Base		Faced	For Facing
Size	*Flanges	to Face	Flange	Faced	and	and Drilling
-	Inches	Inches	Inches	Only	Drilled	Base Flange
4	10	7	$6\frac{1}{2}$	\$13.50	\$15.00	\$4.50
41/2	101/2	71/2	$61\sqrt{5}$	16.50	18.00	4.50
5	11	8	712	18.75		
6	121/2	81/2	712		20.25	5.25
7			1/2	22.75	24.75	5.25
-	14	9	$7\frac{1}{2}$	31.50	33.75	5.25
8	15	10	10	36.00	38.50	7.50
9	$16\frac{1}{4}$	$10\frac{1}{2}$	10	51.00	54.35	7.50
10	171/2	111/2	10	57.00	61.00	
12	$20\frac{1}{2}$	13	$12\frac{1}{2}$			7.50
14	23			84.00	88.50	11.00
		15	$12\frac{1}{2}$	105.00	110.50	11.00
15	$24\frac{1}{2}$	$15\frac{1}{2}$	$12\frac{1}{2}$	120.00	127.00	11.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	$12\frac{1}{2}$	135.00	143.00	11.00
18	28	18	15	157.00	166.00	
20	301/2	$19\frac{1}{2}$	15			18.00
22				180.00	190.00	18.00
	33	$20\frac{1}{2}$	$17\frac{1}{2}$	225.00	238.00	18.00
24	36	$22\frac{1}{2}$	171/2	285.00	300.00	18.00

*Port openings only, not base flange.

Base Tees

Base tees made on special order. Prices on application.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure

Straight Side Outlet Elbows



All extra heavy fittings have a raised surface, for gaskets $\frac{1}{16}$ inch thick inside of bolt holes. Bolt holes drilled $\frac{1}{16}$ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

		J THE WORLD	OF HITTIGO OF CICION	
Size Inches	Diameter Flanges Inches	Center to Face Inches	Faced Only	Faced and Drilled
4 5	$\begin{array}{c} 10 \\ 11 \end{array}$	7 8	\$35.75 37.75	\$38.00 40.00
6	$^{12\frac{1}{2}}_{14}$	$\frac{81}{9}$	42.00 51.75	45.00 55.00
10	$\frac{15}{17\frac{1}{2}}$	$\begin{array}{c} 10 \\ 11\frac{1}{2} \end{array}$	61.25 89.00	65.00 95.00
12 14 16	$20\frac{1}{2}$ 23	13 15	113.25 146.75	120.00 155.00
10 T	25½	16½	168.00	180.00

Larger sizes made to order. Prices upon application.

Reducing Side Outlet Elbows

Reducing on the Branches Same Size



The dimensions of reduced hunged fittings are always regulated by the reductions of the outlet or branch.

Side outlet elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular tees having same reductions.

Side outlet elbows, whether straight or reducing, are furnished with all openings on intersecting center lines.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All extra heavy fittings have a raised surface, for gaskets 1/6 inch thick inside of bolt holes. Bolt holes drilled 1/8 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

		0)	THE THE OF COLON	
Size	Diameter	Center	PRICE,	EACH-
	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
4	10	7	\$39.75	\$42.00
5	11	Θ.		
		0	41.75	44.00
6	$12\frac{1}{2}$	81/2	47.00	50.00
7	14	9	56.75	60.00
8	16	10	67.25	71.00
10	$17\frac{1}{2}$	$11\frac{1}{2}$	99.00	105.00
12	$20\frac{1}{2}$	13	123.25	130.00
14	23	15	161.75	170.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	183.00	195.00

Larger sizes made to order. Prices upon application.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure

Straight Double Branch Elbows



All extra heavy fittings have a raised surface, for gaskets 1/16 inch thick inside of bolt holes. Bolt holes drilled 1/16 inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size Inches	Diameter Flanges Inches	Center to Face Inches	Faced Only	Faced and Drilled
4 5	10	7 8	\$35.75 42.75	\$38.00 45.00
6	$\frac{121}{2}$	8½ 9	49.50 56.50	52.50 60.00
8	$\frac{15}{17\frac{1}{2}}$	$\frac{10}{11\frac{1}{2}}$	66.25 84.00	70.00 90.00
12 14	$\begin{array}{c} 20\frac{1}{2} \\ 23 \end{array}$	13 15	108.25 141.75	115.00 150.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	168.00	180.00

Larger sizes made to order. Prices upon application.

Reducing Double Branch Elbows

Reducing on the Branches Same Size



The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch.

Double branch elbows, whether straight or reducing sizes, carry same dimensions center to face and face to face as regular straight size elbows and tees.

Prices given for reducing elbows are for fittings reducing on the branches same size. If fittings are wanted with two branches of two different sizes, or reducing on the inlet, they will be furnished on special order at a special price.

All extra heavy fittings have a raised surface, for gaskets ½ inch thick inside of bolt holes. Bolt holes drilled ½ inch larger in diameter than diameter of bolts.

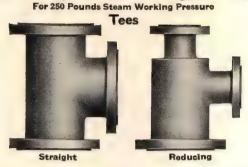
Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

1	MI MINITOW I DOOG	Ozzaj j dezza-no	0 00000 11 000 00 00 00	
Size		Center to Face Inches	Faced Only	Faced and Drilled
4	10	. 7	\$39.75	\$42.00
5	11	8	47.75	50.00
6	$12\frac{1}{2}$	$8\frac{1}{2}$	54.50	57.50
7	14	9	62.50	66.00
8	15	10	73.75	77.50
10	171/2	111/2	94.00	100.00
12	201/2	13	118, 25	125.00
14	23	15	156.75	165.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	188.00	200.00

Larger sizes made to order. Prices upon application.

Extra Heavy Cast Iron Flanged Fittings



All reducing tees, 16 inches and smaller take the same center to face dimensions as straight size tees of largest port. All tees reducing on the run only take the same dimensions center to face as the largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on the size of outlet.

Bullheads, or tees having outlet larger than the run, will be

Bullheads, or tees having outlet larger than the run, will be the same length center to face of all openings as a tee with all openings of the size of the outlet.

All extra heavy fittings have a raised surface, for gaskets

1/6 inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter

of the bolts.
Size of all fittings scheduled indicates inside diameter of

ports.

Furnished faced only, unless otherwise ordered.

Straight Tees

	Diameter	Center	PRICE,	EACH -
Sise	Flanges Inches	to Face Inches	Faced Only	Faced and Drilled
Inches				
11/4	5	41/4	\$6.50	\$7.85
11/2	6	41/2	6.50	7.85
2	61/2	5	6.50	7.85
$2^{1/2}$	$7\frac{1}{2}$	$5\frac{1}{2}$	6.90	8.25
3	81/4	6	7.50	9.15
31/2	9	61/2	8.90	10.80
4	10	7	9.75	12.00
$4^{1/2}$	$10\frac{1}{2}$	71/2	12.00	14.25
5	11	8	13.50	15.75
5 6 7 8 9	$12\frac{1}{2}$	81/2	16.50	19.50
7	14	9	23.00	26.35
8	15	10	26.00	29.75
9	$16\frac{1}{4}$	101/2	37.00	42.00
10	171/2	$11\frac{1}{2}$	41.50	47.50
12	2012	13	61.00	67.75
14	23	15	90.00	98.25
15	241/2	151/2	102.00	112.00
16	$25\frac{1}{2}$	161/2	119.00	131.00
18	28	18	154.00	168.00
20	301/2	191/2	195.00	210.00
22	33	$20\frac{1}{2}$	247.06	267.00
24	36	221/2	305.00	328.00
~ .			ees	
11/	6 .	41/2	\$7.50	\$8.85
$\frac{11/2}{2}$	61/2	5	7.50	8.85
21/	$\frac{0}{7}\frac{7}{2}$	51/2	8.00	9.35
21/2	81/4	$6^{5/2}$	8.60	10.25
3	9	61/2	10.25	12.15
31/2		7		
4	10		11.25	13.50
41/2	101/2	$7\frac{1}{2}$	13.75	16.00
5	11	8	15.50	17.75
6	$12\frac{1}{2}$	81/2	19.00	22.00
7	14	9	26.50	29.85
8	15	10	30.00	33.75
9	161/4	$10\frac{1}{2}$	42.50	47.50
10	171/2	111/2	47.75	53.75
12	$20\frac{1}{2}$	13	70.00	76.75
14	23	15	103.50	111.75
15	$24\frac{1}{2}$	$15\frac{1}{2}$ $16\frac{1}{2}$	117.00	127.00
16	$25\frac{1}{2}$	161/2	137.00	149.00
18	28	18	177.00	191.00
20	$30\frac{1}{2}$	$19\frac{1}{2}$	225.00	240.00
22	33	201/2	285.00	305.00
24	36	$22\frac{1}{2}$	350.00	373.00
-	1 1. 4	Dai-		4.

Larger sizes made to order. Prices upon application.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure



Straight Single Sweep

All extra heavy fittings have a raised surface, for gaskets 1/2-inch high, inside of bolt holes.

Bolt holes will be drilled 1/8-inch larger than the diameter of the bolts.

Size of all fittings scheduled indicate inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size	Diameter	Center	Parce	, EACH
Inches	Flanges	to Face	Faced	Faced and
	Inches	Inches	Only	
2	$6\frac{1}{2}$	5	\$7.50	Drilled
$2^{1/2}$	71/6	51/2		\$8.85
3	81/4		8.00	9.35
31/2		6	8.60	10.25
	9	$6\frac{1}{2}$	10.25	12.15
4	10	7 ~	11.25	
41/2	101/2	71/		13.50
5	11	$7\frac{1}{2}$	13.75	16.00
6		8	15.50	17.75
0	$12\frac{1}{2}$	81/2	19.00	
7	14	9		22.00
8	15	10	26.50	29.85
9	161/4		30.00	33.75
10	10/4	$10\frac{1}{2}$	42.50	47.50
	171/2	111/2	47.75	
12	$20\frac{1}{2}$	13	70.00	53.75
14	23	15		76 . 75
15			103.50	111.75
	$24\frac{1}{2}$	151/2	117.00	127.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	137.00	
18	28	18		149.00
20	301/2		177.00	191.00
22		$19\frac{1}{2}$	225.00	240.00
	33	$20\frac{1}{2}$	285.00	305.00
24_	36	$22\frac{1}{2}$	350.00	
Larger	sizes made to		I linen emali-	373.00
	Poducin		s upon applica	tion.

Reducing Single Sweep Tees Reducing in Run or Branch

All reducing tees, 16 inches and smaller, take same center to face dimensions as straight size tees of largest port. All tees reducing on run only take same dimensions center to face as largest straight size. Tees, sizes 18 inches and larger, and reducing on the outlet, are made in two lengths, depending on size of reduced outlet. Reducing single sweep tees made to order only. Single sweep tees with side openings

larger than run, not made.

All extra heavy fittings have a raised surface, for gaskets 1/2-inch high, inside of bolt holes.

Bolt holes will be drilled 1/2-inch larger than the diameter

Size of all fittings scheduled indicates inside diameter of ports. Furnished faced only, unless otherwise ordered.

Por os.	Turnished laced	only, unless	otherwise ord	lered
CI.	Diameter	Center		
Size	Flanges	to Face	Faced FRICE,	EACH
lnches	Inches	Inches	Only	Faced and
21/2	$7\frac{1}{2}$	$5\frac{1}{2}$	\$9.15	Drilled
3	81/4	6	9.90	\$10.50
31/2	9	61/2		11.55
4	10		11.75	13.65
41/2		7	13.00	15.25
272	101/2	71/2	15.75	18.00
5	11	8	17.85	20.10
6	$12\frac{1}{2}$	81/2	22.00	
7	14	9 "		25.00
8	15		30.50	33.85
9	161/4	10	34.50	38.25
10		101/2	49.00	54.00
	$17\frac{1}{2}$	111/2	55.00	61.00
12	$20\frac{1}{2}$	13	80.00	
14	23	15	119.00	86.75
15	241/2	151/2		127.25
16	251/2		135.00	145.00
18		$16\frac{1}{2}$	158.00	170.00
	28	18	204.00	218.00
20	301/2	191/2	260.00	275.00
22	33	$20\frac{1}{2}$	327.00	
24	36	2212		347.00
Large		1472	402.00	425.00

Larger sizes made to order. Prices upon application.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure Straight Double Sweep Tees



All extra heavy fittings have a raised surface, for gaskets 1/6-inch high, inside of bolt holes.

Bolt holes will be drilled ½-inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

Size	Diameter	Center	PRICE, 1	CA CH-
In.	Flanges	to Face	Faced	Faced and
	Inches	Inches	Only	Drilled
2	61/2	5	_	
21/2	712		\$7.50	\$8.85
2/2	172	$5\frac{1}{2}$	8.00	9.35
3	81/4	6	8.60	
$3\frac{1}{2}$	9	61/2		10.25
4	10	272	10.25	12.15
41/2			11.25	13.50
72	$10\frac{1}{2}$	$7\frac{1}{2}$	13.75	16.00
5	11	8	15.50	
6	$12\frac{1}{2}$	81/2		17.75
7	14		19.00	22.00
5 6 7 8		9	26.50	29.85
0	15	10	30.00	33.75
9	$16\frac{1}{4}$	101/6	42.50	
10	171/2	111/2		47.50
12	2013		47.75	53.75
14		13	70.00	76.75
	23	15	103.50	111.75
15	$24\frac{1}{2}$	151/6	117.00	
16	$25\frac{1}{2}$	1613		127.00
18	28		137.00	149.00
20		18	177.00	191.00
	301/2	$19\frac{1}{2}$	225.00	240.00
22	33	201/2	285.00	
24	36	221/2		305.00
Larg	er sizes made to	, , ,	350.00	373.00
-344 8	or pirrop made to	order. Prices	s upon applicat	ion.
	D	_		

Reducing Double Sweep Tees

Reducing in Branch Only

All reducing tees 16 inches and smaller reducing on outlet, take same center to face dimensions as straight size tees of largest port. Tees, sizes 18 inches and larger reducing on outlet, are made in two lengths, depending on size of outlet. Double sweep tees not made reducing on run.

All extra heavy fittings have a raised surface, for gaskets high, inside of bolt holes.

Bolt holes will be drilled 1/8-inch larger than the diameter of the bolts. Sizes of all fittings scheduled indicate the inside diameter of ports.

Furnished faced only, unless otherwise ordered

r urmsneq	raced only,	unless	otherwise ordered.	
	Diameter	Center		T1.
Size	Flanges	to Fac		EACH-
Inches	Inches	Inches		Faced and
21/2	71%	51/2		Drilled
3	814	072	\$9.15	\$10.50
	7.18	6	9.90	11.55
31/2	9	$6\frac{1}{2}$	11.75	13.65
4	10	7	13.00	
41/2	$10\frac{1}{2}$	71/2		15.25
5 ° 6	11	8	15.75	18.00
6			17.85	20.10
	121/2	81/2	22.00	25.00
7	14	9	30.50	33.85
8	15	10	34.50	
9	161/4	101/2		38.25
	171%		49.00	54.00
	- · /. Al	111/2	55.00	61.00
	$20\frac{1}{2}$	13	80.00	86.75
	23	15	119.00	127.25
15	$24\frac{1}{2}$	151/2	135.00	
16	$25\frac{1}{2}$	$16\frac{1}{2}$	158.00	145.00
	28	18		170.00
			204.00	218.00
	301/2	$19\frac{1}{2}$	260.00	275.00
	33	$20\frac{1}{2}$	327.00	347.00
24	36	221/2	402.00	
Larger sizes	made to o	2 / 44 _	3 4	425.00
g a wason		ruct. I	Prices upon applicati	ion.

Extra Heavy Cast Iron Flanged Fittings

For 250 Pounds Steam Working Pressure

Straight Side Outlet or Four Way Tees



All extra heavy fittings have a raised surface, for gaskets $\frac{1}{10}$ inch thick inside of bolt holes. Bolt holes drilled $\frac{1}{10}$ inch larger in diameter than diameter of bolts.

Size of all fittings scheduled indicates inside diameter of

Furnished faced only, unless otherwise ordered.

	Diameter	Center	PRICE,	EACH
Size	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
4	10	7	\$42.00	\$45.00
5	11	8	47.00	50.00
6	$12\frac{1}{2}$. 81/2	53.50	57.50
7	14	9	63.00	67.50
8	15	10	72.50	77.50
10	$17\frac{1}{2}$	$11\frac{1}{2}$	102.00	110.00
12	201/2	13	131.00	140.00
14	23	15	159.00	170.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	184.00	200.00
Lare	er sizes made	to order Pri	ces unon applica	

Larger sizes made to order. Prices upon application.

Reducing Side Outlet or Four Way Tees



The dimensions of reduced flanged fittings are always regulated by the reductions of the outlet or branch. Fittings reducing on the run only, the long body pattern will always be used.

Side outlet tees, whether straight or reducing, carry same dimensions center to face and face to face as regular tees having same reductions.

Bolt holes will not be spot faced unless so ordered, for which an extra charge will be made.

All extra heavy fittings have a raised surface, for gaskets $\frac{1}{16}$ inch thick inside of bolt holes. Bolt holes drilled $\frac{1}{16}$ inch larger in diameter than diameter of bolts.

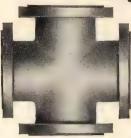
Size of all fittings scheduled indicates inside diameter of

Furnished faced only, unless otherwise ordered.

~:	Diameter	Center	PRICE, EA	
Size	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
AHUMUU		41101103		Dinied
4	10	7	\$47.00	\$50,00
5	11	8	52.00	55.00
6	$12\frac{1}{2}$	$8\frac{1}{2}$	59.00	63.00
7	14	9	70.50	75.00
0		-		
8	15	10	80.00	85.00
10	$17\frac{1}{2}$	$11\frac{1}{2}$	110 00	
			112.00	120.00
12	$20\frac{1}{2}$	13	146.00	155.00
14	23	. 15		
14		15	174.00	185.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	204.00	220.00
10	4072	1072	202.00	220.00

Larger sizes made to order. Prices on application.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure Straight Crosses



All extra heavy fittings have a raised surface, for gaskets inch high, inside of bolt holes.

Bolt holes will be drilled ½-inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

***		Center	PRICE.	EACH-
Size	Diameter	to Face	Faced	Faced and
Inches	Flanges, In.	Inches	Only	Drilled
11/4	5	41/4	\$10.00	\$11.80
11/2	6	$4\frac{1}{2}$	10.00	11.80
2	$6\frac{1}{2}$	5	10.00	11.80
21/2	$7\frac{1}{2}$	$5\frac{1}{2}$	10.50	12.30
3	81/4	6	11.50	13.75
31/2	9	$6\frac{1}{2}$	13.50	16.00
4	10	7	15.00	18.00
41/2	$10\frac{1}{2}$	$7\frac{1}{2}$	18.00	21.00
5	11	8	20.50	23.50
6	$12\frac{1}{2}$	81/2	25.00	29.00
7	14	9	35.00	39.50
8	15	10	40.00	45.00
9	$16\frac{1}{4}$	$10\frac{1}{2}$	56.00	62.75
10	$17\frac{1}{2}$	$11\frac{1}{2}$	63.00	71.00
12	201/2	13	92.00	101.00
14	23	15	136.00	147.00
15	$24\frac{1}{2}$	151/2	155.00	169.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	180.00	196.00
18	28	18	235.00	253.00
20	$30\frac{1}{2}$	$19\frac{1}{2}$	300.00	320.00
22	33	$20\frac{1}{2}$	375.00	401.00
24	36	$22\frac{1}{2}$	465.00	495.00
Large	r sizes made to	orden Price	g upon applicat	

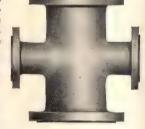
Larger sizes made to order. Prices upon application.

Reducing Crosses

All reducing crosses, 16 inches and smaller, take same center to face dimensions as straight size crosses of largest port. All crosses reducing on run only take same dimensions, center to face, as largest straight size. Sizes 18 inches and larger, reducing on the outlet, are made in two lengths depending on size of outlet.

depending on size of outlet.

All extra heavy fittings have a raised surface, for gaskets hinch high, inside of bolt holes.



Bolt holes are drilled 1/s-inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicate inside liameter of ports.

Furnished faced only, unless otherwise ordered.

CI I		Center	PRICE,	EACH-
Size	Diameter	to Face	Faced	Faced and
Inches	Flanges, In.	Inches	Only	Drilled
2	$6\frac{1}{2}$	5	\$11.50	\$13.30
$2^{1/2}$	$7\frac{1}{2}$	$5\frac{1}{2}$	12.00	13.80
3	81/4	6	13.25	15.50
31/2	9	$6\frac{1}{2}$	15.50	18.00
4	10	7	17.00	20.00
41/2	$10\frac{1}{2}$	$7\frac{1}{2}$	21.00	24.00
5	11	8	23.50	26.50
6	$12\frac{1}{2}$	81/2	29.00	33.00
5 6 7 8 9	14	9 ~	40.00	44.50
8	15	10	46.00	51.00
9	$16\frac{1}{4}$	101/2	65.00	71.75
10	$17\frac{1}{2}$. 111/2	72.00	80.00
12	$20\frac{1}{2}$	13	106.00	115.00
14	23	15	158.00	169.00
15	$24\frac{1}{2}$	$15\frac{1}{2}$	177.00	191.00
16	$25\frac{1}{2}$	$16\frac{1}{2}$	207.00	223.00
18	28	18	270.00	288.00
20	$30\frac{1}{2}$	191/2	345.00	365.00
22	33	$20\frac{1}{2}$	430.00	456.00
24	36	$22\frac{1}{2}$	535.00	565.00
Large	er sizes made to		Prices upon applica	

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure Straight Y Branches or Laterals



All extra heavy fittings have a raised surface, for gaskets ½-inch high, inside of bolt holes.

Bolt holes will be drilled 1/8 inch larger than the diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports.

Furnished faced only, unless otherwise ordered.

			less otherwise ordered.		
	Diameter	Center		, EACH	
Size	Flanges	to Face	Faced	Faced and	
Inche	8 Inches	Inches	Only	Drilled	
2	$6\frac{1}{2}$	9	\$10.00		
21/2	$7\frac{1}{2}$	101/2		\$11.80	
3			10.50	12.30	
	$8\frac{1}{4}$	11	11.50	13.75	
31/2	9	$12\frac{1}{2}$	13.50		
4	10	131/2		16.00	
41/-	101/2		15.00	18.00	
= 72	10/2	$14\frac{1}{2}$	18.00	21.00	
4 ¹ / ₂ 5 6	11	15	20.50	23.50	
6	$12\frac{1}{2}$	171/2	25.00		
7	14			29.00	
7 8 9		19	35.00	39.50	
0	15	$20\frac{1}{2}$	40.00	45.00	
9	$16\frac{1}{4}$	$22\frac{1}{2}$	56.00		
10	1713			62.75	
12	£ 64	24	63.00	71.00	
	$20\frac{1}{2}$	271/2	92.00	101.00	
14	23	31	136.00		
15	$24\frac{1}{2}$	33		147.00	
16	0517		155.00	169.00	
	$25\frac{1}{2}$	$34\frac{1}{2}$	180.00	196.00	
18	28	371/2	235.00	253.00	
20	$30\frac{1}{2}$	401/2			
22	33		300.00	320.00	
		$43\frac{1}{2}$	375.00	401.00	
24_	36	$47\frac{1}{2}$	465.00	495.00	
La	rger sizes made to			200.00	
	The same of the sa		Prices upon applic		
		/ D	1 1 1		

Reducing Y Branches or Laterals Reducing in Run or Branch

All Y branches or laterals reducing on run only carry same dimensions, face to face, as straight size laterals. All reducing Y or laterals, 16 inches and smaller, take same center to face dimensions as same sizes in straight size fittings. Sizes 18 inches and up, reducing on branch, are made in two lengths, depending on size of branch.

All extra heavy fittings have a raised surface, for gaskets he inch high, inside of bolt

holes. Bolt holes are drilled ½ inch larger in diameter than diameter of bolts. Sizes of all fittings scheduled indicates inside diameter of ports.

morac a	ameter of bo	rts.		
Furni	shed faced on	ly, unless o	otherwise order	, d
	TAIGHTEONET	Center	Personal Area order	CU.
Size	Flanges	to Face	Faced	Faced and
Inches	Inches	Inches	Only	Drilled
21/2	71/2	$10\frac{1}{2}$	\$12.00	\$13.80
3	81/4	11	13.25	
31/2	9	121/2		15.50
4	10	131/2	15.50	18.00
41/2	101/2		17.00	20.00
5/2		$14\frac{1}{2}$	21.00	24.00
6	11	15	23.50	26.50
0	$12\frac{1}{2}$	171/2	29.00	33.00
5 6 7 8 9	14	19	40.00	
8	15	201/2	46.00	44.50
9	$16\frac{1}{4}$	221/2		51.00
10	171/2	$\frac{24}{24}$	65.00	71.75
12	201/2		72.00	80.00
14		$27\frac{1}{2}$	106.00	115.00
	23	31	158.00	169.00
15	$24\frac{1}{2}$	33	177.00	191.00
16	$25\frac{1}{2}$	341/2	207.00	
18	28	371/2		223.00
20	301/2	401/2	270.00	288.00
22	33	/-	345.00	365.00
24	36	431/2	430.00	456.00
_		471/2	535.00	565.00
Larger	sizes made	to order.	TO .	pplication.
				L.L. TOTALLE CO.

Extra Heavy Cast Iron Flanged Fittings For 250 Pounds Steam Working Pressure

Standard Taper Reducers



All extra heavy fittings have a raised surface, for gaskets in-inch high, inside of bolt holes.

Bolt holes will be drilled 1/8-inch larger in diameter than diameter of the bolts.

Size of all fittings scheduled indicates inside diameter of ports. The face to face dimensions standard or eccentric will be the same.

Furnished faced only unless otherwise ordered.

	otherwise ordered.						
	Size	Diameter	Center	Perce	, Each—		
	Inches	Flanges Inches	to Face	Faced	Faced and		
	21/2X 2		Inches	Only	Drilled		
- 3	3 x 2	7½x 6½	• •	\$9.50	\$10.40		
		$8\frac{1}{4} \times 6\frac{1}{2}$	6	10.25	11.35		
,	3 ¹ / ₂ x 2 ¹ / ₂ 4 x 2	$9 \times 7\frac{1}{2}$	$6\frac{1}{2}$	12.25	13.50		
	1 x 2 1 x 21/2	$10 \times 6\frac{1}{2}$	7	13.50	15.00		
		$10 \times 7\frac{1}{2}$	7	13.50	15.00		
		$10 \times 8\frac{1}{4}$	7	13.50	15.00		
	x 2	$11 \times 6\frac{1}{2}$	8	18.75	20.25		
5	x 21/2	11 x $7\frac{1}{2}$	8	18.75	20.25		
5		11 x 8½	8	18.75	20.25		
5		11 x10	8	18.75	20.25		
6		$12\frac{1}{2}$ x $8\frac{1}{4}$	9	22.75	20.25		
6		12½x 9	9	22.75	24.75		
6	x 4	12½x10	9		24.75		
6	x 5	$12\frac{1}{2}$ x11	9	22.75	24.75		
7	x 3	14 x 81/4	10	22.75	24.75		
7	x 4	14 x10	10	31.50	33.75		
7	x 5	14 x11	10	31.50	33.75		
7	x 6	$\frac{14}{14}$ $\frac{x12}{2}$	10	31.50	33.75		
8	x 3	15 x 814	11	31.50	33.75		
8	x 4	15 x10	11	36.00	38.50		
8		15 x11½		36.00	38.50		
8	x 6	$\frac{15}{15} \times \frac{11}{12}$	11	36.00	38.50		
10	x 4	$17\frac{12}{2}$ x10	11	36.00	38.50		
10	x 5	17½x11	12	57.00	61.00		
10	x 6	171/2/11	12	57.00	61.00		
10	x 8	$17\frac{1}{2}$ x $12\frac{1}{2}$ $17\frac{1}{2}$ x 15	$\frac{12}{12}$	57.00	61.00		
12	x 5	2017-11	12	57.00	61.00		
12	x 6	20½x11	14	84.00	88.50		
12	x 8	20½x12½	14	84.00	88.50		
12	x10	20½x15	14	84.00	88.50		
14	x 6	20½x17½	14	84.00	88.50		
14	x 8	$\frac{23}{2}$ $\times 12\frac{1}{2}$	16	105.00	110.50		
14	x10	23 x15	16	105.00	110.50		
14	x12	23 x17½	16	105.00	110.50		
15	x 8	$\frac{23}{241}$ $\times 20^{1/2}$	16	105.00	110.50		
15	x10	24½x15	17	120.00	127.00		
15	x12	24½x17½	17	120.00	127.00		
15	x14	24½x20½	17	120.00	127.00		
16	=	24½x23	17	120.00	127.00		
16	x 8 x10	$25\frac{1}{2} \times 15$	18	135.00	143.00		
16	x12	25½x17½	18	135.00	143.00		
16	x14	$25\frac{1}{2}$ x $20\frac{1}{2}$	18	135.00	143.00		
18	x10	25½x23	18	135.00	143.00		
18	-	28 x17½	19	157.00	166.00		
18	x12 x14	28 x20½	19	157.00	166.00		
18		28 x23	19	157.00	166.00		
20	x16	28 x25½	19	157.00	166.00		
20	x12	$30\frac{1}{2}$ x $20\frac{1}{2}$	20	180.00	190.00		
20	x14	$30\frac{1}{2}$ x23	20	180.00	190.00		
20	x16	30½x25½	20	180.00	190.00		
22	x18	$30\frac{1}{2}$ x28	20	180.00	190.00		
22	x14	33 x23	22	225.00	238.00		
	x16	$33 \times 25\frac{1}{2}$	22	225.00	238.00		
22	x18	33 x28	22	225.00	238.00		
22	x20	$33 \times 30\frac{1}{2}$	22	225.00	238.00		
24	x16	$36 \times 25\frac{1}{2}$	24	285.00	300.00		
24	x18	36 x28	24	285.0v	300.00		
24	x20	$36 \times 30\frac{1}{2}$	24	285.00	300.00		
24	x22	36 x33	24	285.00	300.00		
T	aper redu	cers of any other			00.00		

Taper reducers of any other dimensions special on order.

Eccentric Taper Reducers

Eccentric taper reducers furnished on special order. Prices upon application.

Extra Heavy Companion Flanges

250 Pounds Steam Working Pressure





Back View Showing Hub

Blind Flange

Cast	Iron	Flanges

	Price		PRICE	. EACH			
Size	Faced	Faced and	* Size	Faced	Faced and		
Inches	Only	Drilled	Inches	Only	Drilled		
1 x 4½	\$.95	\$1.30	8x15	\$5.10	\$6.15		
11/4x 5	1.00	1.35	$9x16\frac{1}{4}$	6.30	7.50		
1½x 6	1.10	1.45	$10x17\frac{1}{2}$	7.40	8.90		
2 x 6½	1.25	1.60	$12 \times 20 \frac{1}{2}$	10.75	12.50		
2½x 7½	1.40	1.75	14x23	15.00	17.00		
3 x 81/4	1.60	2.05	$15x24\frac{1}{2}$	19.00	21.50		
3½x 9	2.00	2.55	$16x25\frac{1}{2}$	22.25	25.00		
4 x10	2.25	2.95	18x28	26.00	29.00		
4½x10½	2.40	3.10	$20x30\frac{1}{2}$	31.00	35.00		
5 x11	2.65	3.35	22x33	36.00	41.00		
6 $x12\frac{1}{2}$	3.30	4.05	24x36	45.00	50.00		
7 x14	4.40	5.30					
No. 11 and International Control Control							

Malleable Iron Flanges

Semi-steel Flanges

Dani	hla '	list of	naat	iman
1.2011	nie-	HST OF	Cast	iron.

1 x 4½	\$1.20	\$1.65	8x15	\$6.40	\$7.70
11/4x 5	1.25	1.70	$9x16\frac{1}{4}$	7.90	9.40
1½x 6	1.35	1.80	$10x17\frac{1}{2}$	9.25	11.00
2 x 6½	1.55	2.00	$12x20\frac{1}{2}$	13.50	15.50
2½x 7½	1.75	2.20	14x23	18.50	21.00
3 x 81/4	2.00	2:55	15x24½	24.00	27.00
3½x 9	2.50	3.20	$16x25\frac{1}{2}$	28.00	31.00
4 x10	2.80	3.70	18x28	32.50	36.00
4½x10½	3.00	3.90	$20 \times 30 \frac{1}{2}$	39.00	44.00
5 x11	3.30		22x33	45.00	51.00
6 x12½	4.10		24x36	56.00	62.00
7 x14	5.50	6.60		00.00	02.00
		Cast Ste			
1 x 41/2	\$5.00		8x15	\$27.00	\$33.00
11/4x 5	5.40		9x161/4	29.50	35.50
1½x 6	5.90		10x171/2	34.50	41.50
2 x 6½	6.90		$12x20\frac{1}{2}$	46.00	54.00
2½x 7½	7.30		14x23	55.50	65.00
3 x 81/4	8.70		15x24½	64.00	75.00
3½x 9	12.10	15.50	16x25½	78.00	90.00
4 x10	14.80	18.50	18x28	98.00	111.00
4½x10½	15.80		20x30½	117.00	131.00
5 x11	16.80		22x33	140.00	157.00
6 x12½			24x36	165.00	182.00
7 x14	24.70	30.50	27100	105.00	102.00
			anot food	h am and	1 6 3

Furnished with bolt holes spot faced, when ordered faced

and drilled, at price given for faced and drilled.						
·	F	orged S	iteel Flanges			
1 x 4½	\$7.50	\$8.00	$6x12\frac{1}{2}$	\$25.40	\$27.00	
11/4x 5	8.40	9.00	7x14	27.20	32.00	
1½x 6	9.40	10.00	8x15	32.00	35.00	
2 x 6½	10.40	11.00	$9x16\frac{1}{4}$	37.00	40.00	
2½x 7½	11.80	13.00	$10x17\frac{1}{2}$	45.00	48.00	
3 x 8½	13.70	15.00	$12 \times 20 \frac{1}{2}$	56.00	60.00	
$3\frac{1}{2} \times 9$	17.60	19.00	14x23	75.50	80.00	
4 x10	18.30	20.00	$15x24\frac{1}{2}$	84.00	90.00	
$4\frac{1}{2}$ x $10\frac{1}{2}$	20.30	22.00	$16x25\frac{1}{2}$	93.00	100.00	
5 x11	22.30	24.00				
	Cas	st Iron	Blind Flange	es		
$1\frac{1}{2} \times 6$	\$1.65	\$2.00	$9x16\frac{1}{4}$	\$9.50	\$10.70	
$2 \times 6\frac{1}{2}$	1.90	2.25	$10x17\frac{1}{2}$	11.00	12.50	
2½x 7½	2.10	2.45	$12 \times 20 \frac{1}{2}$	16.00	17.75	
3. x 8½	2.40	2.85	14x23	22.50	24.50	
$3\frac{1}{2}x 9$	3.00	3.55	$15x24\frac{1}{2}$	28.50	31.00	
4 x10	3.35	4.05	$16x25\frac{1}{2}$	33.50	36.25	
$4\frac{1}{2}$ x $10\frac{1}{2}$	3.60	4.30	18x28	39.00	42.00	
5 x11	. 4.00	4.70	$20x30\frac{1}{2}$	46.00	50.00	
$6 \text{ x} 12\frac{1}{2}$	5.00	5.75	22x33	54.00	59.00	
7 x14	6.60	7.50	24x36	67.00	72.00	
8 x15	7.65	8.70				
	*Semi-steel Blind Flanges					

Semi-steel flanges, 25 per cent advance over cast iron. *All blind flanges, 10-inch and larger, are ribbed.
All flanged fittings are always furnished faced only, unless

otherwise specified.

Extra Heavy Cast Iron Reducing Companion Flanges

For Extra Heavy Flanged Valves and Fittings

250 Pounds Steam Working Pressure



These flanges used in connection with straight or reducing fittings, make it possible to fill orders more promptly. Customers who desire fittings reduced in this manner will please specify "Reduce by Flanges if Necessary.

These flanges will always be of the same thickness as the regular companion flanges of corresponding outside diameters, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 16½-inch O. D. flange, order a 6x16½-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or a 6x9-inch flange.

	Price	, EACH			
Size	Faced	Faced and	Size	Faced	Faced
In.	Only	Drilled	In.	Only	and Drilled
11/4x 6	\$1.80	\$2.15	6x14	\$7.25	\$8.15
11/2x 61/2	2.10	2.45	8x15	8.40	9.45
1½x 7½	2.30	2.65	6x16 ¹ / ₄	10.50	11.70
11/2X 81/4	2.65	3.10	6x17 ¹ / ₂	12.00	13.50
2 x 7½	2.30	2.65	$6x20\frac{1}{2}$	17.50	19.25
2 x 81/4	2.65	3.10	7x15	8.40	9.45
2 x 9	3.30	3.85	7x16 ¹ / ₄	10.50	11.70
2 x10	3.70	4.40	7x171/2	12.00	13.50
$\frac{2}{2} \times \frac{10^{1}}{2}$	4.00	4.70	7x201/2	17.50	19.25
2 x11	4.40	5.10	8x16 ¹ / ₄	10.50	11.70
2 x12½	5.50	6.25	8x171/2	12.00	13.50
21/2X 81/4	2.65	3.10	8x201/2	17.50	19.25
21/2× 9	3.30	3.85	8x23	25.00	27.00
2½x 9 2½x10	3.70	4.40	8x24 ¹ / ₂	31.50	34.00
21/2×101/2	4.00	4.70	9x171/2	12.00	13.50
2½x11	4.40	5.10	9x201/2	17.50	19.25
21/2×121/2	5.50	6.25	9x23	25.00	27.00
3 x 9	3.30	3.85	10x20 ¹ / ₂	17.50	19.25
3 x10	3.70	4.40	10x23	25.00	27.00
3 x10 ¹ / ₂	4.00	4.70	10x24 ¹ / ₂	31.50	34.00
3 x11	4.40	5.10	10x251/2	37.00	39.75
3 x121/2	5.50	6.25	12x23	25.00	27.00
3 x15	8.40	9.45	12x241/2	31.50	34.00
31/2×10	3.70	4.40	$12 \times 25 \frac{1}{2}$	37.00	39.75
31/2×101/2	4.00	4.70	12x28	43.00	46.00
31/2×11	4.40	5.10	14x241/2	31.50	34.00
31/2×15	8.40	9.45	14x251/2	37.00	39.75
4 x101/2	4.00	4.70	14x28	43.00	46.00
4 x11	4.40	5.10	14x301/2	51.00	55.00
4 x121/2	5.50	6.25	15x251/2	37.00	39.75
4 x15	8.40	9.45	15x28	34.00	46.00
4 x161/4	10.50	11.70	15x301/2	51.00	55.00
41/4×11	4.40	5.10	16x28	43.00	46.00
4½x12½	5.50	6.25	16x301/2	51.00	55.00
4½x14	7.25	8.15	16x33	60.00	65.00
5 x12½	5.50	6.25	18x301/2	51.00	55.00
5 x14	7.25	-8.15	18x33	60.00	65.00
5 x15	8.40	9.45	18x36	74.00	79.00
5 x16 ¹ / ₄	10.50	11.70	20x33	60.00	65.00
$5 \times 17\frac{1}{2}$	12.00	13.50	20x36	74.00	79.00

Companion flanges are always furnished faced only, unless otherwise ordered.

Templates and Prices for Drilling Standard and Low Pressure Flanged Valves and Fittings

Sizes 1 to 48-inch, Inclusive



These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

Bolt holes are drilled $\frac{1}{8}$ inch larger than nominal diameter of bolts.

Size In. 1 11/4 11/2 2	Diam. Flanges In. 4 4 1/2 5 6	Thickness Flanges In. 716 1/2 916 58	Bolt Circle In. 3 33/8 37/8 43/4	No. Bolts 4 4 4 4	Size Bolts In. 716 716 1/2 5/8	Bolt Lengths In. $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{3}{4}$ 2	PRICE, EAValves With Two Flanges Except Angle Valves \$.60 .60 .60 .75	Angle Valves \$1.00 1.00 1.25	Cross Valves and Cross Safety Valves \$1.20 1.20 1.50
2½ 3 3½ 4	7 7½ 8½ 9	$ \begin{array}{c} 11_{16} \\ 3_{4} \\ 13_{16} \\ 15_{16} \end{array} $	5½ 6 7 7½	4 4 4 8	5/8 5/8 5/8 5/8	$2\frac{1}{4}$ $2\frac{1}{4}$ $2\frac{1}{2}$ $2\frac{3}{4}$.75 .75 1.00 1.25	1.25 1.25 1.50 1.75	1.50 1.50 2.00 2.50
4 ¹ / ₂ 5 6 7	$9\frac{1}{4}$ 10 11 $12\frac{1}{2}$	$15_{16}^{15}_{16}$ 1 1_{16}^{15}	$7\frac{3}{4}$ $8\frac{1}{2}$ $9\frac{1}{2}$ $10\frac{3}{4}$	8 8 8	3/4 3/4 3/4 3/4	$2\frac{3}{4}$ $2\frac{3}{4}$ 3	1.50 1.50 1.75 2.25	2.00 2.00 2.50 3.00	3.00 3.00 3.50 4.50
8 9 10 12	13½ 15 16 19	$1\frac{1}{8}$ $1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	$11\frac{3}{4}$ $13\frac{1}{4}$ $14\frac{1}{4}$ 17	$\begin{array}{c} 8 \\ 12 \\ 12 \\ 12 \\ 12 \end{array}$	3/4 3/4 7/8 7/8	$ 3\frac{1}{4} $ $ 3\frac{1}{4} $ $ 3\frac{1}{2} $ $ 3\frac{1}{2} $	2.25 2.50 2.50 3.50	3.00 3.50 3.50 5.00	4.50 5.00 5.00 7.00
14 15 16 18	21 $22\frac{1}{4}$ $23\frac{1}{2}$ 25	$1\frac{3}{8}$ $1\frac{3}{8}$ $1\frac{7}{16}$ $1\frac{9}{16}$	$18\frac{3}{4}$ 20 $21\frac{1}{4}$ $22\frac{3}{4}$	$12 \\ 16 \\ 16 \\ 16$	1 1 1 1½8	$\frac{4}{4}$ $\frac{4}{4^{1}/2}$	4.00 4.50 5.00 6.00	6.00 6.50 7.00 10.00	
20 22 24 26	$27\frac{1}{2}$ $29\frac{1}{2}$ 32 $34\frac{1}{4}$	1^{11}_{16} 1^{13}_{16} 1^{7}_{8} 2	25 $27\frac{1}{4}$ $29\frac{1}{2}$ $31\frac{3}{4}$	$20 \\ 20 \\ 20 \\ 24$	$1\frac{1}{8}$ $1\frac{1}{4}$ $1\frac{1}{4}$ $1\frac{1}{4}$		7.50 9.00 10.00 11.00	12.00 14.00 16.00 18.00	
28 30 32 34	$36\frac{1}{2}$ $38\frac{3}{4}$ $41\frac{3}{4}$ $43\frac{3}{4}$	$2\frac{1}{16}$ $2\frac{1}{8}$ $2\frac{1}{4}$ $2\frac{5}{16}$	34 36 $38\frac{1}{2}$ $40\frac{1}{2}$	28 28 28 32	$1\frac{1}{4}$ $1\frac{3}{8}$ $1\frac{1}{2}$ $1\frac{1}{2}$	$5\frac{1}{2}$ $5\frac{3}{4}$ $6\frac{1}{4}$ $6\frac{1}{2}$	12.00 12.00 12.00 14.00	20.00 22.00 22.00 24.00	
36 38 40 42	$ 46 $ $ 48^{3}4 $ $ 50^{3}4 $ $ 53 $	$2\frac{3}{8}$ $2\frac{3}{8}$ $2\frac{1}{2}$ $2\frac{5}{8}$	$42\frac{3}{4}$ $45\frac{1}{4}$ $47\frac{1}{4}$ $49\frac{1}{2}$	32 32 36 36	$1\frac{1}{2}$ $1\frac{5}{8}$ $1\frac{5}{8}$ $1\frac{5}{8}$	6½ 6¾ 7 7¼	14.00 25.00	24.00	
44 46 48	$55\frac{1}{4}$ $57\frac{1}{4}$ $59\frac{1}{2}$	25/8 2i1/6 23/4	$51\frac{3}{4}$ $52\frac{3}{4}$ 56	40 40 44	$1\frac{5}{8}$ $1\frac{5}{8}$ $1\frac{5}{8}$	7½ 7½ 7½ 7½	30.00		

Bolt holes are spot faced only when so ordered except cast steel, which are always furnished spot faced.

Templates and Prices for Drilling Extra Heavy Flanged Valves and Fittings

Sizes 1 to 48-Inch Inclusive



These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

Bolt holes are drilled \(\frac{1}{8} \) inch larger than nominal diameter of bolts.

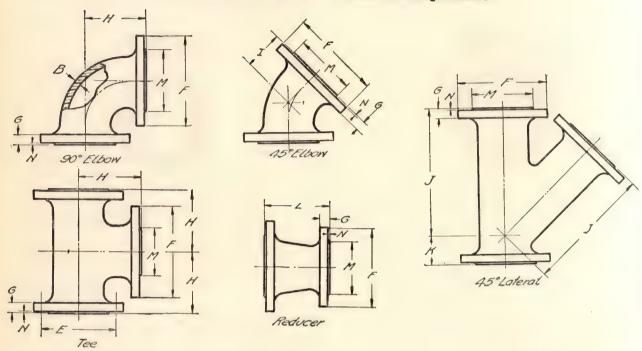
		Thick-			out.		PRICE, EA		RILLING
Size		ness Flanges Inches	Bolt Circle Inches	No. of Bolts	Size Bolts Inches	Bolt Lengths Inches	Except Angle Valves	Angle Valves	Cross Valves
$1 \\ 1^{1/4} \\ 1^{1/2} \\ 2$	$ \begin{array}{c} 4\frac{1}{2} \\ 5 \\ 6 \\ 6\frac{1}{2} \end{array} $	11/16 8/4 13/16 7/8	$ 3\frac{1}{4} $ $ 3\frac{3}{4} $ $ 4\frac{1}{2} $ $ 5 $	4 4 4	1/2 1/2 5/8 5/8	$2 \\ 2\frac{1}{4} \\ 2\frac{1}{2} \\ 2\frac{1}{2} $	\$.60 .60 .60	\$1.00 1.00 1.00 1.25	\$1.20 1.50
$\frac{2^{1/2}}{3}$ $\frac{3^{1/2}}{4}$	81/4	$1 \\ 1\frac{1}{8} \\ 1\frac{3}{16} \\ 1\frac{1}{4}$	$5\frac{7}{8}$ $6\frac{5}{8}$ $7\frac{1}{4}$ $7\frac{7}{8}$	4 8 8	3/4 3/4 3/4 3/4	$ \begin{array}{c} 3 \\ 3 \\ 4 \\ 3 \\ 4 \\ 3 \\ 2 \end{array} $.75 .75 1.00 1.25	1.25 1.25 1.50 1.75	1.50 1.50 2.00 2.50
4 ¹ / ₂ 5 6 7	$10\frac{1}{2}$ 11 $12\frac{1}{2}$ 14	$1\frac{5}{16}$ $1\frac{3}{8}$ $1\frac{7}{16}$ $1\frac{1}{2}$	$8\frac{1}{2}$ $9\frac{1}{4}$ $10\frac{5}{8}$ $11\frac{7}{8}$	8 12 12	3/4 3/4 8/4 7/8	$3\frac{1}{2}$ $3\frac{3}{4}$ $3\frac{3}{4}$ 4	1.50 1.50 1.75 2.25	2.00 2.00 2.50 3.00	3.00 3.00 3.50 4.50
8 9 10 12	$15 \\ 16\frac{1}{4} \\ 17\frac{1}{2} \\ 20\frac{1}{2}$	$1\frac{5}{8}$ $1\frac{3}{4}$ $1\frac{7}{8}$ 2	13 14 $15\frac{1}{4}$ $17\frac{3}{4}$	$12 \\ 12 \\ 16 \\ 16$	7/8 1 1 11/8	$ \begin{array}{r} 4\frac{1}{4} \\ 4\frac{3}{4} \\ 5 \\ 5\frac{1}{4} \end{array} $	2.25 2.50 2.50 3.50	3.00 3.50 3.50 5.00	4.50 5.00 5.00 7.00
14 15 16 18	$23 \\ 24\frac{1}{2} \\ 25\frac{1}{2} \\ 28$	$2\frac{1}{8}$ $2\frac{3}{16}$ $2\frac{1}{4}$ $2\frac{3}{8}$	$20\frac{1}{4}$ $21\frac{1}{2}$ $22\frac{1}{2}$ $24\frac{3}{4}$	$20 \\ 20 \\ 20 \\ 24$	$1\frac{1}{8}$ $1\frac{1}{4}$ $1\frac{1}{4}$ $1\frac{1}{4}$	$5\frac{1}{2}$ $5\frac{3}{4}$ 6 $6\frac{1}{4}$	4.00 4.50 5.00 6.00	6.00 6.50 7.00	8.00 9.00
20 22 24 26	$30\frac{1}{2}$ 33 36 $38\frac{1}{4}$	$2\frac{1}{2}$ $2\frac{5}{8}$ $2\frac{3}{4}$ $2\frac{13}{16}$	27 $29\frac{1}{4}$ 32 $34\frac{1}{2}$	24 24 24 28	$1\frac{3}{8}$ $1\frac{1}{2}$ $1\frac{5}{8}$ $1\frac{5}{8}$	$6\frac{1}{2}$ 7 $7\frac{1}{2}$ $7\frac{3}{4}$	7.50 9.00 10.00		
28 30 32 34	$40\frac{3}{4}$ 43 $45\frac{1}{4}$ $47\frac{1}{2}$	2^{15}_{16} 3^{1}_{8} 3^{1}_{4}	37 $39\frac{1}{4}$ $41\frac{1}{2}$ $43\frac{1}{2}$	28 28 28 28	$1\frac{5}{8}$ $1\frac{3}{4}$ $1\frac{7}{8}$ $1\frac{7}{8}$	$ \begin{array}{c} 8 \\ 8 \\ 4 \\ 8 \\ 2 \\ 9 \end{array} $	12.00		
36 38 40 42	50 $52\frac{1}{4}$ $54\frac{1}{2}$ 57	$3\frac{3}{8}$ $3\frac{7}{16}$ $3\frac{9}{16}$ $3\frac{11}{16}$	46 48 $50\frac{1}{4}$ $52\frac{3}{4}$	32 32 36 36	$1\frac{7}{8}$ $1\frac{7}{8}$ $1\frac{7}{8}$ $1\frac{7}{8}$	$9\frac{1}{4}$ $9\frac{1}{4}$ $9\frac{1}{2}$ $9\frac{3}{4}$		• • • •	
44 46 48	$59\frac{1}{4}$ $61\frac{1}{2}$ 65	$\frac{3\frac{3}{4}}{3\frac{7}{8}}$	55 $57\frac{1}{4}$ $60\frac{3}{4}$	36 40 40	2	$10 \\ 10\frac{1}{4} \\ 10\frac{1}{2}$			

Bolt holes are spot faced only when so ordered except cast steel, which are always furnished spot faced.

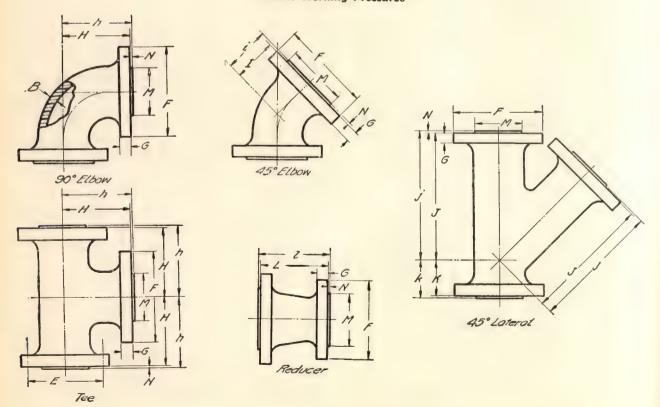
Walworth Sigma Steel Flanged Fittings

Tentative American Standard

Dimension Cuts for 250 Pounds Steam Working Pressure



Dimension Cuts for 400, 600 and 900 Pounds
Steam Working Pressures



Walworth Sigma Steel Flanged Fittings

Tentative American Standard



Walworth Sigma Steel Fittings conform to the Tentative American Steel Flange and Flange Fittings Standards for

250, 400, 600 and 900 pounds steam working pressures at total temperatures of 750° F.

Finished Dimensions for 250 Pounds Steam Working Pressure

							D.				1 10354	re			
Size of Fitting Inches 2 2 21/2 3 31/2 4 5 6 8 10 112 114 116 118 20 24	Inside Diam, of Fitting A 2 2 1/2 3 3 1/2 4 5 6 8 10 12 131/4 151/4 17 19 23	Mirimum Thick. of Shell 14 14 14 14 14 14 14 14 14 14 14 14 14	No. of Bolts c 4 4 8 8 8 8 12 12 16 16 20 20 24 24 24	Diam. of Bolts D 5/8 3/4 4 3/4 4 3/4 4 3/4 1 1/8 1 1/8 1 1/8 8 1 1/8 8	Diam. of Bolt Circle 5 578 658 714 778 914 4 1058 13 1514 1734 2212 2434 227 2434	Diam. of Flange F 61/2 81/4 9 10 11 121/2 15 171/2 201/2 23 251/2 28 301/2 36	Minimum Thick of Flange G 7/8 1 1/8 13/16 11/4 13/8 11/16 11/8 2 21/8 21/4 23/8 21/4 21/4 21/4 21/4 21/4 21/4 21/4 21/4	MENSIONS, I Center to Face of Ell, Tee and Cross H 5 5 1/2 6 6 1/2 7 8 8 1/2 10 11 1/2 13 15 16 1/2 18 19 1/2 22 1/2		Long C. to F. Lateral 9 10 ¹ / ₂ 11 12 ¹ / ₂ 13 ¹ / ₂ 20 ¹ / ₂ 24 27 ¹ / ₂ 31 34 ¹ / ₂ 40 ¹ / ₂ 47 ¹ / ₂	Short C. to F. Lateral . K 21/2 21/2 3 3 31/2 4 5 51/2 6 6 1/2 7 1/2 8 8 1/2	Face to Face Reducer 5 51/2 6 61/2 7 8 9 11 12 14 16 18 19 20	Raised Face M 35 6 4 / 8 5 1 2 6 3 16 1 4 1 1 1 1 1 2 2 1	Height of Raised Face 1/16 1/16 1/16 1/16 1/16 1/16 1/16 1/1	Center to Face of Long Radius Ell 61/2 7 7 73/4 81/2 9 101/4 111/2 14 161/2 19 211/2 24 261/2 29
		20		. 0					4.44	41/2	10	24	$27\frac{1}{4}$	1/16	34
41/2	41/	5/	0	0.7	01.4		Speci								
7	$\frac{4^{1}/2}{7}$	5/16 13/32	8 12	3/4 7/8	$8\frac{1}{2}$ $11\frac{7}{8}$	$10\frac{1}{2}$ 14	$1\frac{5}{16}$ $1\frac{1}{2}$	$9^{7\frac{1}{2}}$	$\frac{4^{1}/2}{6}$	$\frac{14\frac{1}{2}}{19}$	$\frac{31/2}{41/2}$	$7\frac{1}{2}$	$\frac{63}{4}$ $\frac{95}{8}$	1/16 1/16	$9\frac{1}{2}$ $12\frac{3}{4}$

Finished Dimensions for 400 Pounds Steam Working Pressure

									Dne	NSIONS, I		****	King	rressu	re				
Size of Fitting Inches	A	В	No. of Bolts	Diam. of Bolts	Diam. of Bolt Circle	Diam. of Flange	Min- imum Thick. of Flange G	Basic O. to F. E. of Elbow, Te and Cross	Center to Face of e Elbow, Tee	Basic C.		Long Basic C. to F. E. Lateral	Long Center to Face Lateral	Short Basic C. to F. E. Lateral	Short Center to Face Lateral	Basic F. E. to F. E. Reducer	to Face	of	Ht. of Male Face
4 5 6 8 10 12 14 16 18 20 24	$ \begin{array}{c} 4 \\ 5 \\ 6 \\ 8 \\ 10 \\ 12 \\ 13^{1}_{8} \\ 15 \\ 17 \\ 18^{7}_{8} \\ 22^{5}_{8} \end{array} $	3/8 7/16 9/16 11/16 3/4 13/16 15/16 11/16 13/16	8 8 12 12 16 16 20 20 24 24 24	7/8 7/8 1 11/8 11/4 11/4 11/4 13/8 11/2 13/4	77/8 $91/4$ $105/8$ 13 $151/4$ $173/4$ $201/4$ $221/2$ $243/4$ 27 32	$\begin{array}{c} 10 \\ 11 \\ 12^{1/2} \\ 15 \\ 17^{1/2} \\ 20^{1/2} \\ 23 \\ 25^{1/2} \\ 28 \\ 30^{1/2} \\ 36 \end{array}$	$1\frac{3}{8}$ $1\frac{1}{2}$ $1\frac{5}{8}$ $1\frac{1}{7}$ 8 $1\frac{1}{7}$ 8 $2\frac{1}{4}$ $2\frac{3}{8}$ $2\frac{1}{2}$ $2\frac{5}{8}$ $2\frac{3}{4}$ 3	$7\frac{3}{4}$ $8\frac{3}{4}$ $9\frac{1}{2}$ $11\frac{1}{2}$ 13 $14\frac{3}{4}$ 16 $17\frac{1}{2}$ 19 $20\frac{1}{2}$ 24	8 9 9 ³ / ₄ 11 ³ / ₄ 13 ¹ / ₄ 15 16 ¹ / ₄ 17 ³ / ₄ 19 ¹ / ₄ 20 ³ / ₄ 24 ¹ / ₄	$5\frac{1}{4}$ $5\frac{3}{4}$ 6 $6\frac{1}{2}$ $7\frac{1}{2}$ $8\frac{1}{2}$ 9 10 $10\frac{1}{2}$ 11 $12\frac{1}{2}$	$5\frac{1}{2}$ 6 $6\frac{1}{4}$ $6\frac{3}{4}$ $7\frac{3}{4}$ $8\frac{3}{4}$ $9\frac{1}{4}$ $10\frac{1}{4}$ $10\frac{3}{4}$ $11\frac{1}{4}$ $12\frac{3}{4}$	$ \begin{array}{c} 15 \\ 16\frac{1}{2} \\ 17\frac{1}{2} \\ 22 \\ 25\frac{1}{2} \\ 29\frac{1}{2} \\ 32\frac{1}{2} \\ 36 \\ 39 \\ 42\frac{1}{2} \\ 50 \end{array} $	$15\frac{1}{4}$ $16\frac{3}{4}$ $17\frac{3}{4}$ $22\frac{1}{4}$ $25\frac{3}{4}$ $32\frac{3}{4}$ $36\frac{1}{4}$ $39\frac{1}{4}$ $42\frac{3}{4}$ $50\frac{1}{4}$	$4^{1}/4$ $4^{3}/4$ 5 $5^{1}/2$ 6 $6^{1}/4$ $6^{3}/4$ $7^{3}/4$ $8^{1}/4$ $8^{3}/4$ $10^{1}/4$	4 ¹ / ₂ 5 5 ¹ / ₄ 5 ³ / ₄ 6 ¹ / ₂ 7 8 8 ¹ / ₂ 9	7 ³ / ₄ 8 ³ / ₄ 9 ¹ / ₂ 11 ¹ / ₂ 13 14 ³ / ₄ 16 18 19 20 ¹ / ₂ 24	8 ¹ / ₄ 9 ¹ / ₄ 10 12 13 ¹ / ₂ 15 ¹ / ₄ 16 ¹ / ₂ 18 ¹ / ₂ 19 ¹ / ₂ 21 24 ¹ / ₂	$6\frac{3}{16}$ $7\frac{5}{16}$ $8\frac{1}{2}$ $10\frac{5}{8}$ $12\frac{3}{4}$ 15 $16\frac{1}{4}$ $18\frac{1}{2}$ 21 23 $27\frac{1}{4}$	N 1/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4
-1/	-11	4.4							Specia	Sizes				. / 2			-1/2	21/4	/4
11/4 41/2 7 * 1/2 * 3/4 *11 *11/2 *2 *21/2 *3 *31/2 Non	11/4 41/2 7 1/2 3/4 1 11/2 2 21/2 3 31/2 TE.—Di	716 12 14 14 14 14 14 516 38 8	4 8 12 4 4 4 4 8 8 8 8 8	5/8 7/8 1 1/2/8 5/8 3/4 5/8 3/4 7/8 poolt he	37/8 81/2 117/8 25/8 31/4 31/2 41/2 5 71/4 ole is 1	514 1012 14 334 458 478 618 612 712 814 9	13/6 17/6 13/4 9/6 5/8 11/6 7/8 1 11/8 11/4 13/8 1 larger	$\begin{array}{c} 4\frac{1}{4} \\ 8\frac{1}{4} \\ 10\frac{1}{2} \\ 3 \\ 3\frac{1}{2} \\ 4 \\ 4\frac{1}{2} \\ 5\frac{1}{2} \\ 6\frac{1}{4} \\ 6\frac{3}{4} \\ 7\frac{1}{4} \\ \end{array}$	41/2 81/2 103/4 31/4 33/4 41/4 43/4 61/2 71/2 bolt diag	21/2 51/2 61/3/4 2 23/4 41/4 43/4 51/4 meter	$2^{3}/4$ $5^{3}/4$ $6^{3}/4$ 2 $2^{1}/4$ 3 $4^{1}/4$ $4^{1}/2$ 5 $5^{1}/2$	$7\frac{1}{4}$ 16 $20\frac{1}{2}$ $5\frac{1}{4}$ $6\frac{1}{2}$ $10\frac{3}{4}$ $12\frac{1}{4}$ $13\frac{1}{4}$	$7\frac{1}{2}$ $16\frac{1}{4}$ $20\frac{3}{4}$ $5\frac{1}{2}$ 6 $6\frac{3}{4}$ $8\frac{3}{4}$ 11 $12\frac{1}{2}$ $13\frac{1}{2}$ $14\frac{1}{2}$	$2\frac{1}{4}$ $4\frac{1}{2}$ $5\frac{1}{4}$ $1\frac{1}{2}$ $1\frac{3}{4}$ $2\frac{1}{2}$ $3\frac{1}{4}$ $3\frac{3}{4}$ $4\frac{1}{4}$	$2^{1}/2$ $4^{3}/4$ $5^{1}/2$ $1^{3}/4$ $2^{1}/4$ $2^{3}/4$ $3^{1}/2$ $3^{1}/2$ $4^{1}/2$	$\begin{array}{c} 4\frac{1}{2} \\ 8\frac{1}{4} \\ 10\frac{1}{2} \\ 4\frac{1}{2} \\ 4\frac{1}{2} \\ 4\frac{1}{2} \\ 6\frac{1}{4} \\ 6\frac{3}{4} \\ 7\frac{1}{4} \end{array}$	5 8 ³ / ₄ 11 5 5 5 5 6 6 ³ / ₄ 7 ¹ / ₄ 7 ³ / ₄	2½ 6¾4 9½8 13½8 111½6 2 27,8 4½8 5 51⁄2	1/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4

Note.—Diameter of bolt hole is ½ inch larger than bolt diameter

*When these sizes are required use 600 pounds steam working pressure fittings; which are the same as shown, as to flange, thickness and diameter, bolting, and center to face dimensions.

Walworth Sigma Steel Flanged Fittings

Tentative American Standard

Continued

Finished Dimensions for 600 Pounds Steam Working Pressure

		Min-					Min-	Basic	—Dime	nsions,]	NCHES-								
Size of Fitting Inches	Inside Diam. of Fitting	imum Thick. of Shell B	No. of Bolts	Diam. of Bolts	Diam. of Bolt Circle E	Diam. of Flange	imum Thick, of Flange G	C. to F. E. of Elbow, Tee	Center to Face of Elbow, Tee and Cross	to F. E. 45° Elbow	450	Long Basic C. to F. E. Lateral	Long Center to Face Lateral	Short Basic C. to F. E. Lateral	Short Center to Face Lateral	Basic F. E. to F. E. Reducer	Face to Face Reducer	Diam. B of Raised B Face	of
1/2 3/4 1 11/2 2 21/2 3 31/2 4 5	1/2 3/4 1 1/2 2 2/2 3 3/2 4 5 6	14444468876626864	4 4 4 8 8 8 8 8 8 12	1/2/8/8/8/4/4/8/8 1 1	25/8 31/4 31/2 41/2 5 57/8 65/8 71/4 2111/2	33/4 45/8 47/8 61/8 61/2 71/2 81/4 9 103/4 13	916 58 11 16 11 11 13 13 14 13 14 13 14 17 8	3 3 ¹ / ₂ 4 4 ¹ / ₂ 5 ¹ / ₂ 6 ¹ / ₄ 6 ³ / ₄ 7 ¹ / ₄ 8 ¹ / ₄ 9 ³ / ₄ 10 ³ / ₄	314 334 414 434 534 612 7 712 812 10	1 ³ / ₄ 2 2 2 ³ / ₄ 4 4 ¹ / ₄ 4 ³ / ₄ 5 ¹ / ₄ 5 ³ / ₄ 6 ³ / ₄ 7 ¹ / ₄	2 2 ¹ / ₄ 2 ¹ / ₄ 3 4 ¹ / ₂ 5 5 ¹ / ₂ 6 7	$5\frac{1}{4}$ $5\frac{3}{4}$ $6\frac{1}{2}$ $8\frac{1}{2}$ $10\frac{3}{4}$ $12\frac{1}{4}$ $13\frac{1}{4}$ $14\frac{1}{4}$ $16\frac{1}{4}$ $19\frac{1}{4}$ $20\frac{3}{4}$	51/2 6 68/4 83/4 11 121/2 131/2 141/2 161/2 191/2	$ \begin{array}{c} 1 \frac{1}{2} \\ 1 \frac{3}{4} \\ 2 \\ 2 \frac{1}{2} \\ 3 \frac{1}{4} \\ 4 \frac{1}{4} \\ 4 \frac{1}{4} \\ 6 \frac{1}{4} \\ \end{array} $	$1\frac{3}{4}$ 2 $2\frac{1}{4}$ $2\frac{3}{4}$ $3\frac{1}{2}$ 4 $4\frac{1}{2}$ $4\frac{1}{2}$ 6 $6\frac{1}{2}$	41/2 41/2 41/2 41/2 51/2 61/4 63/4 71/4 81/4 93/4	5 5 5 6 6 ³ / ₄ 7 ¹ / ₄ 7 ³ / ₄ 8 ³ / ₄ 10 ¹ / ₄ 11 ¹ / ₄	$13/8$ 1^{11} 16 2 $2^{7/8}$ $3^{5/8}$ $4^{1/8}$ $5^{1/2}$ $6^{3/6}$ $7^{5/6}$	1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4
8	77/8		12	11/8	$13\frac{3}{4}$	$16\frac{1}{2}$	$2\frac{3}{16}$	$12\frac{3}{4}$	13	81/4	$8\frac{1}{2}$	$24\frac{1}{4}$	$24\frac{1}{2}$	$6\frac{3}{4}$	7	$12\frac{3}{4}$	$13\frac{1}{4}$	$\frac{8^{1}/2}{10^{5}/8}$	1/4
10 12 14	$9\frac{3}{4}$ $11\frac{3}{4}$ $12\frac{7}{8}$	7/8 1 11/8	$ \begin{array}{c} 16 \\ 20 \\ 20 \end{array} $	$1\frac{1}{4}$ $1\frac{1}{4}$ $1\frac{3}{8}$	17 $19\frac{1}{4}$ $20\frac{3}{4}$	20 22 $23\frac{3}{4}$	$2\frac{1}{2}$ $2\frac{5}{8}$ $2\frac{3}{4}$	$15\frac{1}{4}$ $16\frac{1}{4}$ $17\frac{1}{4}$	$15\frac{1}{2}$ $16\frac{1}{2}$ $17\frac{1}{2}$	$9\frac{1}{4}$ $9\frac{3}{4}$ $10\frac{1}{2}$	$9\frac{1}{2}$ 10 $10\frac{3}{4}$	$\frac{29\frac{1}{4}}{31\frac{1}{4}}$	$29\frac{1}{2}$ $31\frac{1}{2}$ $34\frac{1}{4}$	$7\frac{3}{4}$ $8\frac{1}{4}$ $8\frac{3}{4}$	$\frac{8}{81/2}$	$15\frac{1}{4}$ $16\frac{1}{4}$ $17\frac{1}{4}$	$15\frac{3}{4}$ $16\frac{3}{4}$ $17\frac{3}{4}$	$12\frac{3}{4}$ 15 $16\frac{1}{4}$	1/4 1/4 1/4
16 18 20 24	$14\frac{3}{4}$ $16\frac{1}{2}$ $18\frac{1}{4}$ 22	$1\frac{1}{4}$ $1\frac{3}{8}$ $1\frac{1}{2}$ $1\frac{3}{4}$	$20 \\ 20 \\ 24 \\ 24$	$1\frac{1}{2}$ $1\frac{5}{8}$ $1\frac{5}{8}$ $1\frac{7}{8}$	$23\frac{3}{4}$ $25\frac{3}{4}$ $28\frac{1}{2}$ 33	27 29½ 32 37	$\frac{3}{3\frac{1}{4}}$ $\frac{31}{2}$ $\frac{4}{4}$	191/4	19½	11½	1134	381/4	38½	93/4	10	19¼	19¾	$18\frac{1}{2}$ 21 23 $27\frac{3}{4}$	1/4 1/4 1/4 1/4
									Specia	i Sizes									
1½ 4½ 7	$1\frac{1}{4}$ $4\frac{1}{2}$ $6\frac{7}{8}$	$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{16}$	4 8 12	1 1 ¹ / ₈	$3\frac{7}{8}$ $9\frac{1}{4}$ $12\frac{1}{2}$	$ \begin{array}{c} 5\frac{1}{4} \\ 11\frac{1}{2} \\ 15 \end{array} $	$15/8 \ 21/16$	$ \begin{array}{r} 4\frac{1}{4} \\ 8\frac{3}{4} \\ 11\frac{3}{4} \end{array} $	$\frac{4\frac{1}{2}}{9}$ 12	$2\frac{1}{2}$ $6\frac{1}{4}$ $7\frac{3}{4}$	$\frac{2^{3}4}{6^{1}2}$	$7\frac{1}{4}$ $17\frac{1}{4}$ $22\frac{1}{4}$	$7\frac{1}{2}$ $17\frac{1}{2}$ $22\frac{1}{2}$	$ \begin{array}{c} 2\frac{1}{4} \\ 5\frac{1}{4} \\ 6\frac{1}{4} \end{array} $	$2\frac{1}{2}$ $5\frac{1}{2}$ $6\frac{1}{2}$	$ \begin{array}{r} 4\frac{1}{2} \\ 8\frac{3}{4} \\ 11\frac{3}{4} \end{array} $	$ \begin{array}{c} 5 \\ 9\frac{1}{4} \\ 12\frac{1}{4} \end{array} $	$2\frac{1}{2} \\ 6\frac{3}{4} \\ 9\frac{5}{8}$	1/4 1/4 1/4

Finished Dimensions for 900 Pounds Steam Working Pressure

								Dimi	NSIONS,	INCHES-								
Inside Diam. of Fitting	Min- imum Thick of Shell B	No. of Bolts	Diam. of Bolts D	Diam. of Bolt Circle	Diam. of Flange	Min- imum Thick, of Flange G	C. to F. H. of Elbow, Tee and Cross	Center to Face of	Basic C	Center	Long Basic C. to F. E. Lateral	Long C. to F. Lateral	Short Basic C. to F. E. Lateral	to F.	Basic F. E. to F. E. Reducer	Face to Face Reducer	Face	leight of Raised Face
5/6	1/4	4	3/	4	57%	1	43/	5	31/4	31/6		q		21/	414	5		
11%	5/10	4	7%		7	11/6	53/	6						212				74
115/10	3/2	8	8/	57%	71/6		61/4	61/6					21/	212	617		25/8	74
	Via		7%	61%	81%		63/			-		1316	23/		68/	71	41/	14
215/10	1/2	8	7/2	71/2	91/2		71%		512				417		717	73/	4/8	74
	9/16	8	1	81/2	103/		81/4	81/2	53/			161/2	41/	412	21/	93/		1/4 1/4 1/4 1/4 1/4
313/16	5/8	8	11/8				83/					171%	51/4	516	23/	012	63/	
	3/4	8					103/	11	71/		203/	21	61/4	61/2	103/		75/-	74
	13/16	12			15				73/				61/				816	14
79/16		12		$15\frac{1}{2}$	181/2				88/4	9		2713						1/4 1/4 1/4 1/4
•				4017												11/4	10/8	74
														$8\frac{1}{2}$		$16\frac{3}{4}$	123/4	1/4
												$34\frac{1}{2}$					15	1/4
12%	1 %	20	1/2	22	20/4	3%	20	$20\frac{1}{4}$	11/4	$11\frac{1}{2}$	361/4	$36\frac{1}{2}$	91/4	$9\frac{1}{2}$	$18\frac{1}{2}$	19	$16\frac{1}{4}$	1/4
143/16	113/16	20	15%	241/4	273/	31/2	22	221/4	121/	121/6	401/6	403/	101/	1016	2014	91	101/	1/
	2	20	17/8	27	31	4		/-	/-		10/4	10/4	10/4	10/2		41		1/4
171/2	21/4	20	$2\frac{1}{4}$	291/2	333/4	41/4										* * * *		14
21		20	$2\frac{1}{2}$	$35\frac{1}{2}$	41													1/4
																	4.74	74
	1/4	4	3/4		$6\frac{1}{4}$	11/8	$5\frac{1}{4}$	$5\frac{1}{2}$	$3\frac{3}{4}$	4	$9\frac{3}{4}$	10	$2\frac{3}{4}$	3	51/4	$5\frac{3}{4}$	21/2	1/4 1/4
	11/					17/	03/	10	03/	Proj.	4017	101/	P0 /					12
$\frac{4^{1}4}{6^{5}8}$	15/16	12	$\frac{11/8}{11/4}$	$10\frac{1}{2}$ $13\frac{3}{4}$	$\frac{13}{16\frac{1}{2}}$	$\frac{17/8}{2^{3}/8}$	$\frac{9^{3}4}{12^{3}4}$	10 13	$\frac{6^{3}4}{8^{1}4}$	81/2	$19\frac{1}{4}$ $24\frac{1}{4}$	$19\frac{1}{2}$ $24\frac{1}{2}$	63/4	6	$9\frac{3}{4}$	$10\frac{1}{4}$	$6\frac{3}{4}$	1/4
	Diamof of Fitting 5/8 11/8 11/8 11/8 21/5/6 21/5/6 33/8 33/8 33/8 43/4 53/4 11/2 11/2 11/3 11/4 11/3 11/4 11/3 11/4 11/4 11/4	Diam. Thick of Shell She	Inside imum Diam. No. of shell Bolts C 5	Inside Imum Diam. Thick No. Diam. Of Bolts B	Inside imum Diam Thick No. Diam Of Bolt Shell Bolts Bolts Circle A B C D E E E E E E E E E	Inside	Inside Diam. Thick No. Diam. Of Diam. Thick Of Diam. Of Dia	Inside	Min- Diam. Of	Min- Diam. Of	Inside Diam. Thick No. of of Shell Bolts Of Diam. Of Shell Bolts Of Shell Of She	Min- Diam. Of	Min- Diam. Of	Ninside Diam. Di	Min- Diam. Of of of Shell Bolts Bolts Shell Bolts Bolts Shell Bolts Sh	Name	Mindown Thick No. Of of of of Shell Bolts Bolts	Min-

Note.—Diameter of bolt hole is 1/8 inch larger than bolt diameter.

The "American Standard" for steel pipe flanges and flange fittings for 250, 400, 600, and 900 lbs. working steam pressures at 750° F. is now in tentative form, and the development of the 1350 lbs. flanges and flange fittings is under way. This standard is being developed under the procedure of the American Engineering Standards Committee, and will be issued as a definite "American Standard" as soon as the sponsor organizations have agreed on the written text to accompany the tables of dimensions of the standard and after sufficient time has been allowed for full discussion and criticism,

The Walworth Company is presenting the tables of dimensions from the "Tentative American Standard" as interpreted in the standard practice resolutions of the Manufacturers Standardization Society of the Valve and Fittings Industry for the purpose of assisting in giving publicity to this "Tentative American Standard," and to promote the use of the standard forms of fittings and the standard dimensions wherever possible. While it has not as yet been definitely adopted as an "American Standard" and is subject to change prior to such adoption, the tables of dimensions have been tentatively agreed upon by the sponsor organizations, and the prospect of any changes in them is remote.

Groove

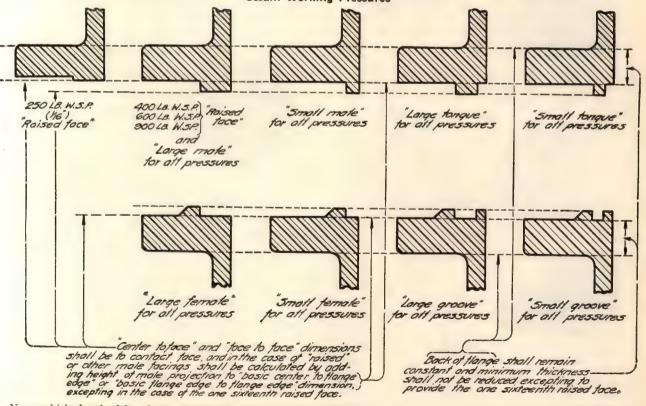
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Walworth Sigma Steel Flanged Fittings

Tentative American Standard Flange Facing Finished Dimensions for 250, 400, 600 and 900 Pounds

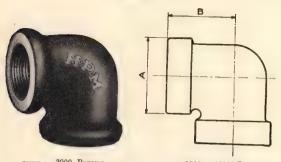
orking Pressures
O. D.
of Large Groove Height of O. D. O. D. of Small of Large and and of Small of Small of Small Groove Female Male Female F. G. H. K. M.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
2.563 2.938 .250 .188 1.750 1.813 3.313 3.688 .250 .188 2.250 2.313 3.813 4.188 .250 .188 2.688 2.750 4.688 5.063 .250 .188 3.313 3.375
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
0.063 10.688 .250 .188 8.375 8.438 2.063 12.813 .250 .188 10.500 10.563 4.313 15.063 .250 .188 12.500 12.563 5.563 16.313 .250 .188 13.750 13.813
7. 688 18. 563 .250 .188 15. 750 15. 813 0.188 21. 063 .250 .188 17. 750 17. 813 2. 063 23. 063 .250 .188 19. 750 19. 813 6. 313 27. 313 .250 .188 23. 750 23. 813
claf Sizes 3.313 6.813 .250 .188 4.813 4.875 9.063 9.688 .250 .188 7.375 7.438 1.063 11.688 .250 .188 9.375 9.438 3.563 17.313 .250 .188 14.750 14.813 4.313 25.313 .250 .188 21.750 21.813

Method of Obtaining Center to Face Finished Dimensions for 250, 400, 600 and 900 Pounds Steam Working Pressures

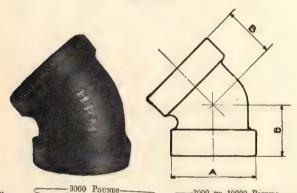


Note. -1/6-inch raised face is standard for 250-pound valves and fittings. 1/4-inch raised face is standard for 400, 600 and 900-pound valves and fittings. All other facings are considered as special.

H-P-M Forgsteel Fittings 90° Ells

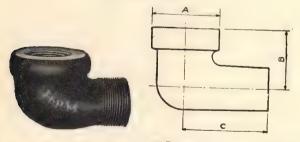


CI.		3000	Pounds-			3000 ro 1	10000 POUNT	ng
Size	DIME	N., IN.	Wt., Lbs.	Price		N., IN.	Wt., Lbs.	Price
In.	A.	B	Each	Each	A	В	Each	Each
1/4 3/2	$1\frac{3}{8}$	11/8	1/				1./	
37	19/	178	72	\$.55	$1\frac{3}{8}$	11/8	1/2	\$.55
78	$1\frac{3}{8}$	T 1/8	. 1/2	. 55	$1\frac{3}{8}$	11/2	1/2	. 55
1/2	11/2	$1\frac{1}{4}$	5/8	. 65	$1\frac{1}{2}$	11/	5%	.65
3/4	$1\frac{3}{4}$	112	1 °			714	1 %	
1 /4	5/4	172	1.	.75	$1\frac{3}{4}$	1/2	T	.75
1 1 1	2	$1\frac{3}{4}$	11/4	. 90	2	13/	11/4	. 90
$\frac{11/4}{11/2}$	$2\frac{3}{8}$	2	2	1.20	23/4	917	31/4	1.50
11/2	23/	21/4				474		
9 /4	314	274	$2\frac{1}{2}$	1.50	$3\frac{1}{4}$	$2\frac{1}{2}$	$-6\frac{1}{4}$	1.90
2		$2\frac{1}{2}$, 4	1.90	37/8	$2\frac{7}{8}$	$10\frac{1}{2}$	2.90
21/2	$3\frac{7}{8}$	$2\frac{7}{8}$	71/4	2.90	41/2	33/8	14	5.00
2 ¹ / ₂ 3	$4\frac{1}{2}$	33/8	11	5.00	1/2	0/8	T.A	3.00
	-/2	0/8						
			4	5° EI	le			



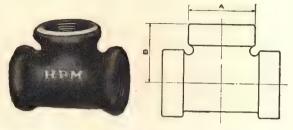
Size	DIMES	TN.	Wt., Lbs.	n.			10000 Pour	
In.	A	В	We, LIUS.		DIMEN.	., IN.	Wt., Lbs.	Price
4.1	25.	13	Each	Each	A	· B	Each	Each
1/4	$1\frac{3}{8}$	136	1/2	\$.70	49/	19.7	1 /	
37	13/	19 7	13		$1\frac{3}{8}$	2/8	1/2	\$.70
78	1 %	216	1/2	. 70	136	13.7	12	.70
1/2	11/6	7/6	12		419	2.10	72	
37	137	4/0	64	.80	1/2	1/8	1/2	.80
3/4	13/4	T	%	. 90	13/4	7	3.7	
1	2	136	4			4.07	74	.90
11/	03/		41.6	1.10	2	13/16	1	1.10
11/4	23/8	111/20	$1\frac{1}{2}$.	1.45	23/		91/	
11/2	23/4	1 7%	2			17/16	$3\frac{1}{4}$	1.80
2/2	-/	7 /10		1.80	$3\frac{1}{4}$	1^{23} %2	5	2.30
-	$3\frac{1}{4}$	1^{23} $_{32}$	3	2.30	$3\frac{7}{8}$	91/	8	
21/2	37/8	21/6	51/		0.78	21/6	0	3.50
- /2	0/8	2715	072	3.50				

Street Ells



			-10000 Pounds	3	
Size	D	IMENSIONS, INCE	TES	Wt., Lbs.	Price
Inches	A	В	C '	Each	Each
1/4	11/18	7/8	11/2	1/2	\$.75
3/8	13/8	11/8	15/8	1/2	.85
1/2	11/2	11/4	13/4	1/2	. 85
3/4	1%	11/2	21/8	3/4	1.05
	2 .	13/4	21/2	11/4	1.40

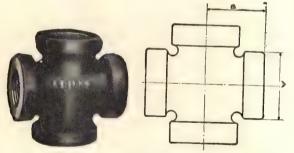
H-P-M Forgsteel Fittings Tees



Size		300	00 Pounds-	
In.	A DIMEN	., IN. B	Wt., Lbs. Each	Price Each
3/4	13/8	11/8	3/4	\$.80
1/2	$\frac{1}{1}\frac{1}{2}$	11/8	3/4	. 80
3/4	134	$1\frac{1}{2}$	114	.95 1.10
11/4	23/8	13/4	134	1.35
$\frac{11/2}{2}$	234	$\frac{1}{2}\frac{1}{4}$	35/8	1.75 2.30
2½ 3	31/4 *	$\frac{21/2}{27/2}$	534	2.90
3	41/2	33/8	$12^{9\frac{1}{2}}$	4.40 7.50
				. 100

Size	7	3000 то	10000 POUNDS	
In.	A	EN., IN.—B	Wt., Lbs. Each	Price Each
3/8	13/8 13/8	11/8	3/4	\$.80 .80
1/2	11/2	114	3/4 3/4	. 80
1	$\frac{1}{2}$	$\frac{1}{1}\frac{1}{2}$	114	1.10
$\frac{11}{4}$	$\frac{2^{3}4}{21}$	214	358	1.35 2.30
2	$\frac{374}{378}$	$\frac{2\frac{1}{2}}{2\frac{7}{6}}$	$\frac{5\frac{3}{4}}{9\frac{1}{5}}$	2.90 4.40
$2\frac{1}{2}$	41/2	33/8	12	7.50

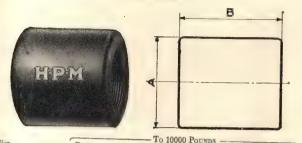
Crosses



		*	
Size In. 1/4 3/8 1/2 3/4 1 11/2 2 2 1/2	A DIMEN., IN. B 13/8 11/8 11/8 11/8 11/4 11/4 11/4 11/4 2 2 11/4 2 2 23/8 2 23/4 21/4 31/4 21/2 27/4 37/4 27/2	-3000 Pounds Wt., Lbs. Each 1 1 1 1 1 2 2 3 5 6	Price Each \$1.10 1.30 1.50 1.90 2.80 3.50 5.00
472	$3\frac{7}{8}$ $2\frac{7}{8}$	11	7.30
Size In.	A DIMEN., IN. B	Wt., Lbs. Each	Price Each
1/4	13/6 11/6	1	61 10

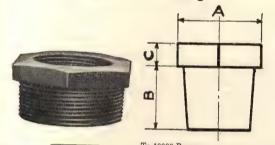
		TOUGO FOUNDS	
ize In.	DIMEN., IN.	Wt., Lbs.	Price
ln.	A B	Each	Each
17.	13/	234012	
74	1 1/8	1	\$1.10
3/8	13/6 11/6	1	
1%	112 112	-	1.30
34	172 174	1	1.50
3/4	1% 1%	$1\frac{1}{2}$	1.90
	9 13/	5/2	
1/	1 1/4	2	2.80
/4	2% 21/4	9	3.50
1/2	917 917	10	
14	074 472	10	5.00
	3/8 21/8	15	7.30

H-P-M Forgsteel Fittings Couplings



Size	DIMENSIO	NS, INCHES	777. 77	
Inches	A Zanierisio.	MS, INCHES	Wt., Lbs.	Price
and and a	23.	В	Each	Each
1/4	1	487	4.4	
/4	1	156	1/4	\$.90
3/2	11/2	137	9.7	
1/	-/8	1%	%	.90
1/2	13/6	13/	57	
37.	762	1/4	78	.90
-/4	1%	2	1	1.00
1	9 -	017		
11/	4	2/4	11/2	1.30
11/4	21/6	912	000	
117	004	4/2	2%	1.60
1 1/2	2%	2.7/2	212	
2	217	=/8	3/2	1.95
	0/4	3	41/2	2.60
21/2	41/	91/	1/2	
- /4	1/4	$3\frac{1}{2}$	11	3.60
				-100

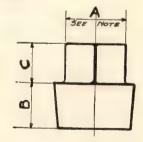
Reducing Bushings



CII			To 10000 Por	INDS -	
Size	D	MENSIONS, INCE	Tan cr		20.1
Inches	Α	To THE	Elia.	Wt., Lbs.	Price
AHOHOS	43.	В	C	Each	Each
1/4	7/	7/	14 . 4		LIGUL
72	/8	1/8	1/4	1/2	\$.70
3/4	112	7/	2.5	68	4.10
/4	178	/8	9/6	1/4	. 70
1	13/	112	3 %	43	
41/	-/8	178	9/8	1/2	. 75
11/4	13/4	11/	12	67	
417	-/4	+78	72	9/8	1.00
11/2	2	11/	9.2	1	
9	01/	7/4	Z 96	· 1	1.25
4	$2\frac{1}{2}$	14	5/2	$2\frac{1}{2}$	
21/2	9 ~	4 19 7	/8	472	2.00
472	9	1196	11,60	2	7.50
3	38/4	ຄ໌້	(2.50)	9	
	0/4	4	1/2	5	12.00

Plugs





O.		——Т	o 10000 Pount	os	
Size Inches		IMENSIONS, INC	HES-	Wt., Lbs.	Price
Inches	A.	B	C	Each	Each
1/4	5/16	5/8 .	3/8	1/6	\$.35
3/8	7/6	1/6	7%	1/2	
1/2	1/3	5%	1%	12	.35
3/4	5%	112	92	78	.35
1 /4	13/	7.16	716	74	.45
11/	7.16	216	216	1/2	. 50
1/4	1 /16	1/8	3/4	3/4	. 75
11/2	$1\frac{1}{4}$	7/8	3/4	7 "	1.10
2	$1\frac{5}{8}$	1	7/6	5	2.25
21/2	2	13/6	11%	23/	
3	23/	17%	112	537	4.50
_	distance acros	~ 4 - 4 -	174	0%	7.50
A_{i}	distance acros	STRICE			

H-P-M Forgsteel Flanged Unions

For Hydraulic Pressure Up to 3000 Pounds



No. 1803, Two-Bolt



No. 1805, Four-Boit

No. 1803 1803 1803	Size In. 1/4 3/8 1/2	No. 2 2 2 2	Bours- Diam. In. 3/4 3/4	Lgth. In. 2 ³ / ₄ 2 ³ / ₄ 2 ³ / ₄	Outside Flange In. 4 ¹ / ₈ 4 ¹ / ₈	Bolt Circle In. $2\frac{1}{2}$ $2\frac{1}{2}$ $2\frac{1}{2}$	Wt., Lbs. Each 3 ⁴ / ₅ 3 ⁴ / ₅ 3 ⁴ / ₅	Price Each \$2.00 2.00 2.00
1803 1803 1805	$1 \\ 1 \\ 1 \\ 1 \\ 4$	$\begin{array}{c} 2 \\ 2 \\ 4 \end{array}$	1 1 1	3½ 3½ 3¾ 3¾	$5\frac{1}{2}$ $5\frac{1}{2}$ $6\frac{3}{8}$	$\frac{3^{3}/8}{3^{3}/8}$ $\frac{4^{3}/8}{4^{3}/8}$	$8\frac{1}{2}$ $8\frac{1}{2}$ $16\frac{1}{2}$	3.00 3.00 4.75
1805 1805 1805	$1\frac{1}{2}$ 2 $2\frac{1}{2}$	4 4	$1 \\ 1\frac{1}{4} \\ 1\frac{1}{2}$	$\frac{3\frac{3}{4}}{4}$ $\frac{4^{1}/2}{2}$	63/8 7 ¹³ /6 8 ¹³ /6	$\frac{43}{8}$ $\frac{55}{16}$ $\frac{61}{16}$	$16\frac{1}{2}$ 27 50	4.75 8.00 17.00

H-P-M Forgsteel Flange Unions

For Hydraulic Pressure, 3000 to 10000 Pounds



No. 1803, Two-Bolt



No. 1085, Four-Bolt



No. 1804, Three-Bolt



No. 1087, Round

		_	-Bolt3		Outside	Bolt		
No.	Size In.	No.	Diam.	Lgth.	Flange	Circle	Wt., Lbs.	Price
	III.		In.	In.	In.	In.	Each	Each
1803	1/4	2	3/4	23/4	41/8	21/2	345	\$2.00
1803	3/8	2	3/	237	41/8	21/2	345	2.00
1803	1/2		3/	23/4	41/8	21/2	34/5	
1804	8.7	3 3	72					2.00
1804	1	9	118	$3\frac{1}{2}$	$5\frac{1}{4}$	$3\frac{1}{2}$	10	3.75
			11/8	4	$6\frac{1}{8}$	41/8	18	4.75
1086	$1\frac{1}{4}$	4	$1\frac{1}{4}$	4	7	45/8	23	5.75
1086	11/2	4	11/4	4	7	45/8	23	6.25
1086	2	4	$1\frac{1}{2}$	41/	81/4	$5\frac{1}{2}$	30	9.00
1087	21/2	6	$1\frac{1}{4}$	43/	814	6	45	
1087	3	6	13/8	43/				17.00
1087			11/8		9	$6\frac{1}{2}$	56	21.00
	$3\frac{1}{2}$	6	$1\frac{1}{2}$	$5\frac{3}{4}$	$10\frac{1}{4}$	$7\frac{1}{2}$	62	27.00
1087	4	8	13/8	6	11	83/8	85	31.50
1087	$4\frac{1}{2}$	8	$1\frac{1}{2}$	$6\frac{1}{2}$	111/2	834	103	42.00
1087	5	8	$1\frac{5}{8}$	7	$12\frac{3}{4}$	10	137	54.00
1087	6	8	13/4	71/4	15	111/6		
		0	-/4	74	40	11/2	230	80.00

Skinner Pipe Saddles



The Skinner Pipe Saddle has the rigidity of a tee fitting with none of the expense or trouble of installing. As it is cylinder-shaped it gives even firm support all the way around and strengthens rather than weakens the pipe. Cannot shear or crush old pipe.

Made of malleable iron which has a high tensile strength, resists pipe-destroying soil conditions and can be sledged when fitting uneven pipe. The outlet boss is built up for ample threads, to secure a lasting joint.

Long bolts and raised lugs combined with the fact that saddle has draw bolts on one side only, full length hinge on the other insure a simple installation under the most awkward conditions. The Skinner Pipe Saddle is reinforced to accommodate tremendous pressures if necessary, such as oil, gas and high pressure water work.



In ordering, be sure to specify what size saddles are to be tapped. The popular large sizes are made in two lengths, for small and large outlets. Sizes above 4 inches have extra reinforcements. All saddles painted with a hard paint to resist rust.

T COTOR I	usv.				
Size	Tapped	Length	No.		
Pipe	for pipe	Over All	of	Weight	Delas
Inches	Inches	Inches	Bolts	Pounds	Price Each
	1/ 9/				
3/4	1/4- %	$3\frac{1}{4}$	2	1	\$.75
3/4	1/4- 1/2	31/4	$\frac{2}{2}$	11/4	.80
1	1/- 3/	31%	$\overline{2}$	112	
	1/ 1/4	237		172	.95
11/4	4-1	$3\frac{3}{4}$	· 2	$1\frac{3}{4}$	1.05
11/2	1/4-1	4	2	$2\frac{1}{2}$	1.30
2	3/4-11/4	41/	2	31/4	1.70
21/2	8/_11/	112	2		2.70
272	24-172	272	4	$3\frac{3}{4}$	2.25
3	%4-2	5	2	$5\frac{1}{2}$	2.75
31/2	3/4-2	$5\frac{1}{2}$	2	6	3.25
4	3/4-2	6	2 2 2 2 2 2 2	8	4.00
41/2	3/ 9	61/2	$\tilde{2}$		
172	24-2	0/2		$10\frac{1}{2}$	5.60
5	%-2	7	3	$12\frac{1}{2}$	6.75
5	$\frac{3}{4}-2$	6	2	14	7.50
6	3 -4	8	3	18	9.50
7	3/ 1	9	9	24	
	24-4		9		12.00
8	$\frac{3}{4}-2$	6	2	22	11.50
8	3 -4	$9\frac{1}{2}$	3	33	16.50
9	3/1-4	10	2	40	19.50
10	3/-2	6	9		
	. /4 44		2	$28\frac{1}{2}$	15.00
10	3 - 4	11	4	. 50	24.00
12	$\frac{3}{4} - 2$	6	2	35	17.00
12	3 -4	12	3 2 3 3 2 3 3 2 4 2 4	65	
	0 1	1.44	2	00	32.00

Skinner Service Saddles Malleable Iron

The raised platform concentrates pressure on the gasket and its flat top leaves nothing to interfere with the use of the wrench. Bolt head, not confined by flanges in casting, cannot turn. This full width, clamplike saddle

the pipe.

The saddle and bolt are painted with a special rustproof lacquer.

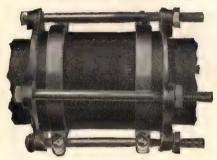
reinforces and supports

Furnished complete with bolt.

In ordering, specify exact size that saddles are to be tapped. Special threads at no extra charge. Lead gaskets attached at no

		9	
extra c	harge when specified.		
Size	Tapped	Weight	Price
Inches	Inches	Pounds .	Eaca
2	$\frac{1}{2}$, $\frac{3}{4}$, 1, $\frac{11}{4}$	23/4	\$1.00
21/2	1/2, 3/4, 1, 11/4	31/4	1.35
2½ 3	$\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$	31/2	1.50
3	11/2, 2	4	1.75
3 C.I.	$1\frac{1}{2}, 2$	41/2	2.35
4	$\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{1}$, $\frac{1}{4}$	4	2.00
4	$1\frac{1}{2}, 2$	5	2.50
4 C.I.	$1^{1/2}, 2$	6	3.25

Skinner Collar Leak Clamps



For stopping collar leaks permanently. Saves the cost of tearing out and renewing collars and coupling. The is clamp works on the principle of a gland and stuffing box, forcing thegasketdirectly into the collar recesses, filling

them completely and stopping leaks at their source, the threads. Made of malleable iron. Consists of four rings, two main rings which receive the pull of the bolts and two gasket container rings.

When bolts are tightened, compression is transmitted to gasket. The gaskets, being completely confined by gasket container ring, and guided by lips in inner side of these rings, go into recesses, stopping leak and making a permanent installation. As the recesses are filled with oil proof packing under pressure, ordinary contraction and expansion does not affect the clamp.

Lugs on main ring are heavily re-inforced. Lips on gasket container ring besides guiding packing into threads, positively prevent it from squeezing out between clamp and collar.

The 2, 3, 4 and 6-inch sizes are packed three to a carton. The 8, 10 and 12-inch sizes are packed in single cartons. All clamps, complete with gaskets and bolts, and painted with special rust-proof lacquer.

Size	No. of	Weight	Price	Size	No. of	Weight	Price
In.	Bolts	Pounds	Each	In.	Bolts	Pounds	Each
2	4	$3\frac{1}{2}$	\$2.20	8	6	24	\$8.20
3	4	$6\frac{1}{4}$	3.20	10	8	30	10.80
4	4	8	3.80	12	8	36	13.50
6	6	15	5.40				

O

Malleable Iron Pipe Saddles Single Strap

Emergency Pipe Clamps



and two or more clamps butted together.

For the larger sizes of pipe, clamps are re-inforced with heavy

ribs, which insure se-

curity under any pres-

resist rust.

For repairing leaks in pipe lines, instantly, permanently. The emergency pipe clamp consists of a malleable iron cylinder, divided in halves, hinged full length along one side and fitted with tightening bolts on the other. A gasket completes the clamp.

When a leak appears, apply and tighten the clamp. The repair is permanent, and the pipe is stronger than it was in the first



Extra Heavy, for Sizes Above 4 Inches

sure. Furnished complete with packing.

Size Pipe In.	Length Over All Inches	Price Each	Size Pine Inches	Length Over All Inches	No. of Bolts	Price Each
1/2	31/4	\$.60	41/2	61/2	2	
3/4	31/4	.68	5	7	3	\$6.75 7.50
1	$3\frac{1}{2}$.75	6	8	3	9.00
1 1/4	33/4	. 90	7	9	3	10.50
1 1/2	4	1.05	8	91/2	3	12.00
2	41/4	1.20	9	10	3	13.50
$2^{1/2}$	$4\frac{1}{2}$	1.50	10	11	4	15.00
3	5	1.88	12	12	4	18.00
31/2	51/2	2.25				
4	6	3.00				

Skinner Pipe Joint Clamps



Repairs leaks where pipe is screwed into fitting. The entire thrust is against the packing and the lip on the gasket container ring guides the packing squarely into the threads.

Made of malleable iron, enough to accommodate vibration and expansion, heavy

enough to withstand the highest pressures. A positive permanent repair on steam, oil, gas, hot or cold water, air, ammonia or brine.

Painted to resist rust and fitted with Tobin bronze thrust screws. Made in halves held together by cap screws.



Size Pipe Inches	Price Each	Size Pipe Inches	Price Each	Size Pipe Inches	Price Each
1/2 3/4	\$1.50 1.50	3 3½	\$4.50 5.25	8	\$13.00 15.75
1 11/4	1.50 1.90	4 41/2	6.00 6.75	10 12	18.75 22.50
$\frac{11/2}{2}$	2.25 3.00	5 6	7.50 9.00	14 15	31.50 33.75
$2^{1/2}$	3.75	7	10.50	16	36.00

Clamps 1/2 to 12-inch are for pipe measured inside diameter; 14-inch and larger, outside diameter.

Barco Flexible Joints







Style 7-8 Straight Joint Female End

Style 7-8C Straight Joint Male Ball

The construction of Barco Joints, with renewable and interchangeable non-metallic gaskets surrounding the ball is mechanically correct in principle.

The success which these joints have had for fifteen years, wherever a flexible connection could be used, is ample proof of the durability and tightness of the gaskets.



Style 7C-8 Main Hexagon Female Ball

Style 7-8A Female Joint 45° Ball

Style 7-8B Female Joint 90° Ball

Bronze joints are made in sizes 1/4 to 2 inches, in both male and female ends. Iron joints made in sizes 1/4 to 48 inches. and female ends. Sizes up to 3 inches are made of malleable iron.

The 1/8 and 1/4 inch, No. 25, joints are for low pressure only, and furnished in bronze only.





Style 7A-8 Angle, One End

Style 7A-8B Angle, Both Ends

All bronze joints above one inch will be furnished with malleable iron thread on ball end. Where all bronze balls are required, joints will be subject to a special quotation. Standard joints are made to stand 150 pounds pressure. Special joints of all kinds made to order, according to re-

quire	ements	5.					
				Price	E, EACH-		
	20	~			Angli	JOINTS-	
	PIPE .		GHT JOINTS	A1	NGLE ONE]	END-	Angle Both
Size		Style	Styles 7-8C	Style	Style	Styles	Ends
In.	No.	7-8	7C-8, 7C-8C	7-8B	7-8A	7A-8	Style 7A-8B
1/0	25	\$5.40					
12	25					\$5.80	* * * * *
7/4		5.40				5.80	
1/4	50	7.50				8.00	\$8.50
1/8 1/4 1/4 3/8 1/2	50	7.50	\$7.50	\$8.00	\$8.00	8.00	8.50
12	50	7.50	7.50				
77	00			8.00	8.00	8.00	8.50
3/4	* *	8.80	7.50	8.00	8.00	9.30	10.00
1		9.90	8.80	9.30	9.30	10.40	11.25
11/4		12.30	9.90	10.40	10.40		
119		-				12.80	13.80
11/2	* 4	14.00	12.30	12.80	12.80	14.50	15.50
2		17.50	14.00	14.50	14.50	19.50	20.20
21/2		21.00	17.50	19.50	19.50	23.00	
3 2							24.00
		26.30	21.00	23.00	23.00	28.30	33.50
4 5	* 0	35.10	26.30	28.30	28.30	38.10	47.10
5		43.90				47.90	
6		58.50					* * * * *
						63.50	
T,O	rextra	a heavy	joints, add	† 50 per	cent to	list.	

Brass Expansion Joints Screwed, Standard Traverse



Size In.	erse In.	Price Each	Size In.	erse In.	Price Each
1/2	2	\$1.50	11/2	$2\frac{1}{4}$	\$5.00
1 3/4	$\frac{2\frac{1}{4}}{2\frac{1}{4}}$	2.20	$\frac{2}{2^{1/2}}$	$\frac{21/2}{21/2}$	8.00 17.50
11/4	$2\frac{1}{4}$	4.00	3	$2\frac{3}{4}$	24.00

Screwed, Special Traverse

Size			Price, Each Price, Inche	0	
Inches	4	*6	8	10	12
1/2 3/4	\$3.80				
3/4	4.00	\$8.25	\$9.00	\$9.75	\$10.50
1	4.90	9.00	10.00	11.00	12.00
11/4	6.30	10.00	11.25	12.50	13.75
11/2	7.40	11.50	13.00	14.50	16.00
2	9.10	13.50	15.50	17.50	19.50
21/2	****	24.00	27.00	30.00	33.00

Iron Body Expansion Joints Brass Sleeves





Screwed

Flanged

Screwed.	Chandand	Tuesday
ocrewed.	Standard	Iraverse

Size Inches	Traverse In.	Price Fach	Size	Traverse In.	Price Each	Size!	ravei In	rse Price Each
2	$2\frac{1}{2}$	\$7.00	41/2	$3\frac{1}{2}$	\$30.00	9	7	\$110.00
$2^{1/2}$	$2\frac{1}{2}$	8.00	5	4	38.00	10	7	160.00
3	$2\frac{3}{4}$	10.00	6	5	45.00	12	8	225.00
31/2	3	14.00	7	6	70.00			
4	$3\frac{1}{4}$	18.00	8	7	100.00			

Screwed,	S	pecia	I Traverse
		PRICE,	EACH-

Size				E A CH		
Inches	*6	10	12	n, Inches — 14	16	18
2	\$11.00	\$16.00	\$18.50	\$21.00	\$23.50	\$26.00
21/2	13.00	19.00	22.00	25.00	28.00	31.00
3	17.50	25.00	29.00	33.00	37.00	41.00
31/2	25.00	35.00	40.00	45.00	50.00	55.00
4	30.00	42.00	48.00	54.00	60.00	66.00
41/2	40.00	52.00	60.00	67.00	75.00	4
5	45.00	62.00	70.00	78.00	86.00	94.00
6	55.00	80.00	92.50	105.00	117.50	130.00
7		100.00	115.00	130.00	145.00	
8		140.00	160.00			

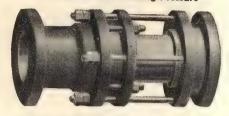
	Flanged, Standard Traverse								
Size	Traverse	Diam. Flanges	Price	Size	Traverse	Diam. Flanges	Price		
Inches	Inches	Inches	Each	Inches	Inches	Inches	Each		
2	$2\frac{1}{2}$	6	\$15.00	7	6	121/2	\$80.00		
21/2	21/2	7	16.00	8	7	$13\frac{1}{2}$	110.00		
3	$2\frac{3}{4}$	$7\frac{1}{2}$	18.50	9	7	15	120.00		
$3\frac{1}{2}$	3	81/2	25.00	10	7	16	175.00		
4	31/4	9	30.00	12	8	19	250.00		
$4\frac{1}{2}$	$3\frac{1}{2}$	$9\frac{1}{4}$	40.00	14	10	21	500.00		
5	4	10	48.00	15	10	221/4	550.00		
6	5	11	55.00	16	10	$23\frac{1}{2}$	600.00		

Flanged Special Traverse

Size			TRAVERS	E, INCHES-		
Inches	*6	10	12	14	1.6	18
2	\$18.00	\$23.00	\$25.50	\$28.00	\$30.50	\$33.00
21/2	20.00	26.00	29.00	32.00	35.00	38.00
3	25.00	32.50	36.50	40.50	44.50	48.50
$3\frac{1}{2}$	35.00	45.00	50.00	55.00	60.00	65.00
4	40.00	52.00	58.00	64.00	70.00	76.00
41/2	50.00	63.00	70.00	77.00	85.00	
5	55.00	72.00	80.00	88.00	96.00	104.00
6	65.00	90.00	102.50	115.00	127.50	140.00
7		112.00	127.00	142.00	157.00	172.00
8		150.00	170.00	190.00	210.00	230.00
10		225.00	255.00	285.00	315.00	350.00
12		300.00	350.00	400.00		
*Eas	tern Tra	verse.				

Extra Heavy Expansion Joints

Iron Body, Brass Sleeve, with Tie Rods
For 250 Pounds Working Pressure



Standard Traverse-Screwed

	Tra-	End to End			Tree.	End to End	
Size	verse	Opened	Price	- Size	verse	Opened	Price
In.	Inches	Inches	Each	In.		Inches	Each
2	$2\frac{1}{2}$	151/8	\$30.00	6			
	517			-	5	247/8	\$100.00
$2^{1/2}$	$2\frac{1}{2}$	1513/6	40.00	7	6	27 1/8	120.00
3	23/4	$16\frac{7}{8}$	50.00	8	7	3034	145.00
$3\frac{1}{2}$	3	18	60.00	9	7	3134	190.00
4	31/4	187/8	70.00	10	7		
-	0/4					$32\frac{3}{4}$	240.00
5	4	$21\frac{5}{8}$	80.00	12	- 8	3615%	290.00

Standard Traverse-Flanged

	Tra-	Diam.	Para da Dana	
Size	verse	Flange	Face to Face	70.1
In.	Inches	Inches	Opened Inches	Price
2				Each
	$2\frac{1}{2}$	$6\frac{1}{2}$	$15\frac{1}{2}$	\$35.00
21/2	$2\frac{1}{2}$	$7\frac{1}{2}$	16	45.00
3	23/4	81/4	175/8	55.00
$3\frac{1}{2}$	3 ***	9		
4			1816	65.00
	$3\frac{1}{4}$	10	$19\frac{1}{2}$	75.00
5	4	11	223/2	85.00
6	5	121/2	2534	105.00
7	6 .	14	281/2	
8	7	15		125.00
	÷		$31\frac{1}{2}$	150.00
9	$\frac{I}{I}$	$16\frac{1}{4}$	$31\frac{5}{8}$	200.00
10	7	$17\frac{1}{2}$	335/8	250.00
12	8	$20\frac{1}{2}$	37 11/6	300.00
14	10	23	43	
15				500.00
	10	$24\frac{1}{2}$	431/8	500.00
16	10	$25\frac{1}{2}$	45	750.00
18	10	28	461/8	1000.00
			10/8	1000.00

Special Traverse—Screwed

Traverse			PRICE, EACHSize, INCHES-		
Inches	2	21/2	3	31/2	4
4	\$35.00	\$45.00	\$55.00	\$65.00	\$75.00
6	40.00	50.00	60.00	70.00	80.00
10	45.00	55.00	65.00	75.00	85.00
12	50.00	60.00	70.00	80.00	90.00
14	55.00	65.00	75.00	85.00	95.00
16	60.00	70.00	80.00	90.00	100.00
Traverse			-PRICE, EACH-		
Inches	5	6	—Size, Înches- 7	8	
6	\$85.00	\$105.00			
10	95.00	125.00	\$145.00	\$175.00	
12	105.00	135.00	160.00	205.00	
14	115.00	145.00	175.00	235.00	
16	125.00	155.00	190.00	265.00	

Special Traverse—Flanged

				-PRICE, EACH		
	Traverse			-Size, Inches		
	Inches	2	21/2	3	31/2	4
	4	\$40.00	\$50.00	\$60.00	\$70.00	\$80.00
	6	45.00	55.00	65.00	75.00	85.00
D	10	50.00	60.00	70.00	80.00	90.00
	12	55.00	65.00	75.00	85.00	95.00
	14	60.00	70.00	80.00	90.00	100.00
	16	65.00	75.00	85.00	95.00	105.00
				-PRICE, EACH		
	Traverse			SIZE, INCHES		
	Inches	5	6	7	8	
	6	\$90.00	\$110.00			
	10	100.00	130.00	\$150.00	\$180.00	
	12	110.00	140.00	165.00	210.00	* * * * * *
	14	120.00	150.00	180.00	240.00	*****
	16	130.00	160.00	195.00	270.00	

Anaconda Seamless Brass, Red Brass and Copper Pipe Standard Pipe Sizes



Anaconda Brass Pipe is made from the best grades of copper and zinc and is manufactured by an especially developed process. Both copper and zinc, the raw materials of brass, come from Anaconda mines. Every step of the manufacture of Anaconda Brass Pipe, from the mining of the ore to the finished product, is under the coordinated control of a single organization.

Brass pipe does not rust, it does not poison water and it has

a long life. It insures a full flow of clear water.
By installing Anaconda Brass Pipe instead of corrodible pipe the home-builder obtains an effective form of insurance, protecting him against rust annoyance and expensive repairs.

Special sizes of Anaconda Brass and Copper Pipe are made to order in such dimensions and gauges as the contractor or architect may require.

Variations from the weights given below must be expected in practice. The weights are based on the following densities: brass, .307 pounds per cubic inch, red brass, .316 pounds per cubic inch; copper, .323 pounds per cubic inch.

Regular

			_			
Std. Size Inches 1/8 1/4 3/8 1/2 3/4	Outside . 405 . 540 . 675 . 840 1. 050	281 . 375 . 494 . 625	Wall Thick- ness Inches . 0620 . 0825 . 0905 . 1075 . 1140	West Brass . 246 . 437 . 612 . 911 1 . 24	Red Brass . 253 . 450 . 630 . 938 1 . 27	Copper . 259 . 460 . 643 . 957
1	1.315	1.062	.1265	1.74	1.79	1.83
11/4	1.660	1.368	.1460	2.56	2.63	$\frac{1.69}{2.69}$
11/2	1.900	1.600	.1500	3.04	3.13	3.20
2	2.375	2.062	.1565	4.02	4.14	4.23
21/2	2.875	2.500	.1875	5.83	6.00	6.14
3	3.500	3.062	.2190	8.31	8.56	
31/2	4.000	3.500	.2500	10.85	11.17	8.75
4	4.500	4.000	.2500	12.29	12.66	11.41
41/2	5.000	4.500	.2500	12.29 13.74		12.94
5	5.563	5.062	. 2505	15.40	14.15	14.46
6	6.625	6.125	.2500	18.44	15.85	16.21
7	7.625	7.062	.2815	23.92	18.99	19.41
8	8.625	8.000	.3125	30.05	24.63	25.17
9	9.625	8.937	.3440	36.94	30.95	31.63
10	10.750	10.019	. 3655		38.03	38.83
		10.010	. 0000	43.91	45.20	46.22

Fortun III

		2	xtra H	eavy		
Std. Size		R, INCHES	Wall Thick- ness	Wes	GHT, POUNDS P.	er Foot
Inches	Outside	Inside	Inches	Brass	Brass	Copper
1/8	.405	. 205	.100	.353	. 363	.371
1/4	.540	.294	.123	. 593	.611	.624
3/8	.675	. 421	.127	.805	.829	.847
1/2 3/4	.840	.542	.149	1.19	1.23	1.25
3/4	1.050	. 736	.157	1.62	1.67	1.71
1	1.315	. 951	.182	2.39	2.46	2.51
11/4	1.660	1.272	.194	3.30	3.39	3.46
11/2	1.900	1.494	.203	3.99	4.10	4.19
2	2.375	1.933	.221	5.51	5.67	5.79
21/2	2.875	2.315	.280	8.41	8.66	8.84
3	3.500	2.892	. 304	11.24	11.57	11.82
31/2	4.000	3.358	.321	13.67	14.07	14.37
4	4.500	3.818	.341	16.41	16.89	
41/2	5.000	4.250	.375	20.07	20.66	17.25
5	5.563	4.813	.375	22.52	23.18	21.10
6	6.625	5.751	.437	31.32	$\frac{23.15}{32.21}$	23.67
6 7 8 9	7.625	6.625	.500	41.23	42.43	32.93
8	8.625	7.625	.500	47.02	48.39	43.34
	9.625	8.625	.500	52.81	54.34	49.42
10	10.750	9.750	.500	59.32		55.56
Price			.000		61.05	62.40
					per pound	

Brass Nipples Iron Pipe Size





Long

Size	Length Close		P	RICE, ROUGH,		
Inches	Inches	69	41/	LENGTH, INC	HES	
1/		Close	11/2	2	21/2	3
1/8	3/4	\$.11	\$.13	\$.15	\$.17	\$.19
1/4	7/8	.13	.16	.19	.22	.25
3/8	1	.15	.19	.23	.27	.31
1/2	11/8	.23	.25	.30	.35	.40
3/4	13/8	.28		.35	.42	.49
1	$1\frac{1}{2}$.37		.44	.53	.62
11/4	15/8	.60			.75	.88
11/2	$1\frac{3}{4}$.70	• • • •		.90	1.05
2	2	1.00			1.20	1.40
21/2	$2\frac{1}{2}$	1.70		• • •	1.20	
3	$2\frac{1}{2}$	2.50		•••	****	2.00
$3\frac{1}{2}$	$2\frac{3}{4}$	4.00		• • •	****	2.90
4	3	4.75	• • • •	• • •	****	
$41/_{2}$	3	5.50	***		****	
5	31/2	8.50	• • •	***	* * * *	
6	31/2	11.50	• • •	* * *	* * * *	
-	-/2	44.00	* * *			

-	0/2	11.00	* * *			
			-Price Ro	OUGH, EACH-		
Size			LENGTE	, INCHES		
Inches	31/2	4	41/2	5	51/2	6
1/8	\$.21	\$.23	\$.25	\$.27	\$.29	
1/4	.28	.31	.34	.37		\$.31
3/2	.35	.39	.43		.40	.43
12	.45			.47	.51	.55
3/2		.50	.55	.60	.65	.70
3/4	.56	. 63	.70	.77	.84	.91
1	.71	.80	.89	.98	1.07	1.16
11/4	1.01	1.14	1.27	1.40	1.53	1.66
11/2	1.20	1.35	1.50	1.65	1.80	1.95
2	1.60	1.80	2.00	2.20	2.40	2.60
21/2	2.30	2.60	2.90	3.20	3.50	3.80
3	3.30	3.70	4.10	4.50	4.90	5.30
31/2		5.40	6.00	6.60		
4		6.15	6.85		7.20	7.80
41/2				7.55	8.25	8.95
5		7.20	8.05	8.90	9.75	10.60
			10.60	11.65	12.70	13.75
6			14.10	15.40	16.70	18.00

Polished brass nipples, longer than close, 25 per cent extra.

Nickel-plated nipples 20 per cent extra over polished list.

Standard Brass Unions

Ground Joints
For 150 Pounds Steam Working Pressure

		. 01 100	, i ouilu	a aream	AAOLKILI
		F	RICE, EAG	CH	
Size		Semi-	Pol-		Pol.
In.	Rough	Fin.	ished	N. P.	Tinned
1/8	\$.40	\$.45	\$.50	\$.60	\$.65
1/4	.50	. 55	. 60	.72	.75
3/8	. 65	.75	.85	1.02	1.05
1/2	.85	. 95	1.05	1.25	1.30
3/4	1.15	1.30	1.40	1.68	1.70
1	1.60	1.75	1.90	2.28	2.35
11/4	2.25	2.50	2.75	3.30	3.30
$1\frac{1}{2}$	2.70	3.00	3.25	3.90	3.85
2	4.00	4.50	5.00	6.00	5.90
$2^{1/2}$	7.50	8.25	9.00	10.80	10.20
3	11.50	12.75	14.00	16.80	16.25
31/2		22.50	25.00	30.00	28.00
4		30.00	33.00		36.75



Prices for acid-resisting metal upon application.



Brass Railing Flanges

PRICE, EACH Size Inches PRICE, EACH Rough Fin. Rough Fin. .75 1.50 $\frac{3}{4}$ x3 $\frac{3}{8}$ Nickel-plated flanges take 20 per

cent over finished list.

Rough Brass Screwed Fittings

Malleable Iron Pattern, Iron Pipe Size

For 125 Pounds Steam Working Pressure









Finished Brass Screwed Fittings

Malleable Iron Pattern, Iron Pipe Size

For 125 Pounds Steam Working Pressure







		Pric	e, Ea	ich				
Sizein.	1/8	1/4	3/8	1/	'	3/4	1	11/4
Sizein. Elbows 90°	\$.12	\$.15	\$.20	\$.:	28	\$.40	\$.63	\$.90
" Reducing		.19	.25		35	. 50	.80	
45°	.16	.20	.25		31	.40	. 63	
341000	.25	.27	.33		48	. 63	.85	
" Drop, Female " Side Outlet			.35		45	. 65	1.05	
Tees	.17	.21	.60		85 40	1.20	1.90	
" Reducing		.25	.35		50	. 55 . 70	. 85 1.05	
" Drop, Female			.43		57	.80	1.05	
" 4-way				1.		1.65	2.50	3.75
Crosses	.25	.30	.40	. !	55	.80	1.25	1.80
" Reducing		.38	.50		70	1.00	1.55	2.25
Bushings, Regular		. 10	.12		15	. 22	. 35	. 50
Face	. 00	.12	.15		19	.27	.44	. 62
Plugs, Regular	.08	.10	.12		15	.20	.30	.45
" Countersunk		* * * *			22 22	.30	.45	.80
Caps	. 10	.13	.16		20	.30	.45	.65
Locknuts	.10	.10	.12		15	.20	.28	.40
Reducers		.15	.20		28	.40	.60	.90
Couplings	. 10	.13	.17		25	.37	. 55	.80
" Rand L		.17	.22		30	.45	. 70	1.00
Return Bends, Close					70	1.00	1.25	1.80
Y Bends.	* * *	*** *	.* * *		80	1.10	1.40	2.15
Unions, Standard		.50	.65		75 35	1.10	1.65	2.50
" Octagen		. 65	.85	1.		1.15	1.60	2.25 2.80
			.00			1.30	2.00	2.00
Size in. Elbows 90°	11/2	2		1/2		3	31/2	4
Elbows 90	\$1.20	\$2.00		.50		.00		\$10.00
" Reducing	1.50	2.50		.25			10.00	12.50
" Street	2.00	3.29		. 50		.00		10.00
" Drop, Female	2.00	3.40		* * *				* * * * *
" Side Outlet	3.60	6.00		.50		.00		
Tees	1.70	2.80		.00			11.00	14.00
" Reducing	2.10	3.50		. 25	10.		14.00	17.50
" 4-way	5.00	8.50						
Crosses	2.40	4.00	7	.00	12.	.00	16.00	20.00
" Reducing Bushings, Regular	3.00	5.00		. 75 . 50		.00	20.00	25.00
" Face	.87	1.25		. 85		. 10	3.75 4.75	5.00
Plugs, Regular	.60	.95		. 50		25	3.75	6.25 5.00
" Solid	1.20	1.90		.00		50	7.50	10.00
" Countersunk	.90	1.40) .					
Сарв	.80	1.25	2	. 50	3.	50	5.50	7.00
Locknuts	.55	.80		. 75		75	4.00	5.00
Reducers	1.10	1.75		.75		00	6.00	8.00
Couplings	1.00	1.60 2.00		. 50 . 10		50 50	5.25	7.00
Return Bends, Close.	2.50	4.25						
" " Open	3.00	4.75		.25	ii.	00		****
Y Bends	3.30	5.50		. 50	16.			26.00
Unions, Standard	2.70	4.00	7.	. 50	11.			
" Octagon	3.60	5.25	9.	.00	14.	00		

Right and Left Elbows and Right and Left Return Bends will be furnished at an advance of 25 per cent over above list prices.

Elbows, Tees, Crosses, Bushings and Reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.

Price, Each

		,	••			
Sizein. 1/8 Elbows, 90°\$.30	1/4	3/8	1/2	3/4	1	11/4
Elbows, 90°\$.30	\$.35	\$.45	\$.56	\$.75	\$1.10	\$1.55
" Reducing	.44	.55	.70	.95	1.40	1.90
" 45°	. 45	.55	.66	.85	1.23	1.70
" Street47	.52	.63	.83	1.08	1.45	2.30
" Drop, Female		.85	1.05	1.40	2.00	2.80
Side Outlet		1.35	1.70	2.25	3.30	
Tees	.49	.63	.80	1.05		4.70
" Reducing	.60	.77	1.00	1.30	1.50	2.15
" Drop, Female		1.13	1.37	1.80	2.55	2.65
" 4-way			2.05	2.70		
Crosses60	.70	.90	1.10	1.50	3.90 2.20	5.70
" Reducing	.88	1.10	1.40	1.85		3.10
Bushings	.22	.27	.35	.47	2.75	3.85
Plugs, Regular23	.30	.37	.43	.55	. 70	1.00
" Solid		.43	.50	.65	.75	1.00
" Countersunk			.42	.55	.90	1.35
Caps20	.25	.31	.40	.55	.80	1.15
Locknuts 24	.25	.32	.40	.50		1.10
Reducers	.35	.45	.56	.75	.65 1.05	.85
Couplings	.28	.36	.46	.63	.90	1.55
" Band L	.37	.47	.58	.80	1.15	1,30 1,65
Beturn Bends, Close			1.55	2.05	2.65	3.75
" " Ореп		141	1.65	2.15	2.80	4.10
Y Bends		111	1.60	2.15	3.05	4.45
Unions, Nemi-finished45	.55	.75	.95	1.30	1.75	2.50
" Finished50	. 60	.85	1.05	1.40	1.90	2.75
		+ 00	1.00	1.40	1 . 714	
		*00	1.05	1.40	1.50	4.75
	2	21	4	3	31/2	4
Sizein 1½ Elbows, 90°\$2.00	2 \$3.00	2 ¹ / ₅ .	50 \$9	3 .00 \$1	3½ 4.00 \$	4
8ize in 1½ Elbows, 90°\$2.00 " Reducing 2.50	2 \$3.00 3.75	2 ¹ / ₅ .	½ 50 \$9 75 11	3 .00 \$1 .25 1	3 ¹ / ₂ 4.00 \$	4 17.50 22.00
Sizein 1½ glbows, 90°\$2.00 " Reducing	2 \$3.00 3.75 3.25	2 ¹ , \$5. 6.	50 \$9 75 11 00 9	3 .00 \$1 .25 1	3 ¹ / ₂ 4.00 \$	4 17.50 22.00 19.50
Size	2 \$3.00 3.75 3.25 4.50	2 ¹ / _{\$5} . 6.	50 \$9 75 11 00 9	3 .00 \$1 .25 1	3 ¹ / ₂ 4.00 \$	4 17.50 22.00 19.50
Sizein 1½ Elbows, 90°\$2.00 \$2.00 " Beducing	2 \$3.00 3.75 3.25 4.50 5.40	2 ¹ , \$5. 6. 6.	50 \$9 75 11 00 9	3 .00 \$1 .25 1	3 ¹ / ₂ 4.00 \$	4 17.50 22.00 19.50
Sizein 1½ Elbows, 90°\$2.00 \$2.00 " Reducing2.50 \$45°2.20 " Street3.00 3.00 " Drop, Female3.60 3.60 " Side Outlet6.00	2 \$3.00 3.75 3.25 4.50 5.40 9.00	\$5. 6. 6.	50 \$9 75 11 00 9	3 .00 \$1 .25 1 .75	3 ¹ / ₂ 4.00 \$	4 17.50 22.00 19.50
Sizein 1½ Elbows, 90°\$2.00 " Reducing2.50 " 45°2.20 " Street3.00 " Drop, Female3.60 " Side Outlet6.00 Tees2.80	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20	21, \$5. 6. 6. 16.	50 \$9 75 11 00 9 50 27 75 12	3 .00 \$1 .25 1 .75 	3 ¹ / ₂ 4.00 \$ 7.50	4 17.50 22.00 19.50
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25	\$5. 6. 6. 16. 7.	50 \$9 75 11 00 9 50 27 75 12 75 15	3 .00 \$1 .25 1 .75 	3 ¹ / ₂ 4.00 \$ 7.50 9.50 4.50	4 17.50 22.00 19.50 24.50 30.50
Sizein 1½ Blbows, 90°\$2.00 \$2.00 " Reducing2.50 \$2.20 " Street3.00 \$3.60 " Drop, Female3.60 \$6.00 Tees2.80 \$3.50 " Reducing	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50	2 ¹ / _{\$5} . 6. 6. 7.	50 \$9 75 11 00 9 	3 .00 \$1 .25 1 .75 	3 ¹ / ₂ 4.00 (7.50 9.50 4.50	4 17.50 22.00 19.50 24.50 30.50
Sizein 1½ Elbows, 90°\$2.00 \$2.00 " Reducing2.50 " 45°	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00	2 ¹ / _{\$5} . 6. 6. 16. 7. 9.	50 \$9 75 11 00 9 50 27 75 12 75 15	3 .00 \$1 .25 1 .75 .00 .75 1 .86 2	3 ¹ / ₂ 4.00 (7.50 (9.50 (4.50 (8.00 (4 \$17.50 22.00 19.50 24.50 30.50
Size. in 1½ Elbows, 90° \$2.00 " Reducing. 2.50 " 45° 2.20 " Street. 3.00 " Drop, Female. 3.60 " Side Outlet. 6.00 Tees. 2.80 " Reducing. 3.50 " 4-way. 7.40 Crosses. 4.00 " Reducing. 5.00	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50	21 \$5. 6. 6. 7. 9.	50 \$9 75 11 00 9 50 27 75 12 75 15 00 18 75 22	3	31/ ₂ 44.00 \$ 7.50 \$ 9.50 44.50 18.00	4 17.50 22.00 19.50 24.50 30.50 35.00 44.00
Sizein 1½ Elbows, 90°\$2.00 \$2.00 "Reducing2.50 \$45°2.20 "Street3.00 3.60 "Drop, Female3.60 3.60 "Side Outlet6.00 4.00 "Reducing	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00	21 \$5. 6. 6. 7. 9.	50 \$9 75 11 00 9 50 27 75 12 75 15 00 18 75 22 00 4	3	3 ¹ / ₂ 44.00 \$ 7.50 \$ 9.50 4.50 18.00 6.25	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00
Sizein 1½ Elbows, 90°\$2.00 \$2.00 " Beducing2.50 " 45°	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00 1.95	21, \$5. 6. 6. 16. 7. 9. 11. 13. 3.	22 50 \$9 75 11 00 9 	3 .00 \$1 .25 1 .75	31/ ₂ 44.00 \$ 77.50 \$ 9.50 44.50 88.00 6.25 6.25	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 8.00
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00	21, \$5. 6. 6. 7. 9. 11. 13. 3. 4.	250 \$975 11 000 9 	3 .00 \$1 .25 1 .75 .00 .75 1 .86 2 .50 3 .50 .25	31/ ₂ 44.00 \$ 77.50 \$ 9.50 \$ 44.50 \$ 88.00 \$ 66.25 \$ 6.25 \$ 0.00	4 517.50 22.00 19.50 24.50 30.50 44.00 8.00 8.00 13.00
Sizein 1½ Elbows, 90°\$2.00 \$2.00 " Beducing2.50 " 45°	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00 1.95 2.90	21, \$5. 6. 6. 16. 7. 9. 11. 13. 3.	250 \$975 11 00 9	3 .00 \$1 .25 1 .75	31/2 4.00 7.50 9.50 4.50 8.00 6.25 6.25 0.00	4 517.50 22.00 19.50 24.50 30.50 44.00 8.00 8.00 13.00
Size	2 \$3.00 3.75 3.25 4.50 9.00 4.20 5.25 11.50 6.00 7.50 2.00 1.95 2.90 2.25	21/ \$5. 6. 6. 7. 9.	250 \$9 75 11 00 950 27 75 12 75 15 00 18 75 22 00 4 00 4 50 6 00 5	3	31/2 4.00 \$ 7.50 \$ 9.50 4.50 \$ 5.00 6.25 6.25 6.25 0.00 \$ 8.00	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00 1.95 2.90 2.25	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4.	250 \$9 75 11 00 950 27 75 12 75 1500 4 00 4 50 650	3	31/2 4.00 \$ 7.50 \$ 9.50 4.50 5.00 6.25 6.25 0.00 8.00 6.50	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 6.00 7.50 2.00 1.95 2.90 2.25 2.25 1.60 2.75 2.35	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4.	250 \$9 75 11 00 9 50 27 75 12 775 15 60 18 75 22 00 4 00 4 50 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	3	31/ ₂ 4.00 \$ 7.50 \$ 9.50 \$ 4.50 \$ 5.00 \$ 6.25 \$ 0.00 \$ 8.00 \$ 6.50 \$ 2.00	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00 10.00 8.00 15.50
Size	2 \$3.00 3.75 3.25 4.50 9.00 4.20 5.40 9.00 7.50 2.00 7.50 2.90 2.25 2.25 1.60 2.75	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4.	250 \$975 11100 9 2775 1250 1550 4450 4650 66	3	31/ ₂ 44.00 \$ 7.50 \$ 9.50 \$ 44.50 88.00 \$ 5.00 6.25 6 6.25 0.00 8.00 9.75	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00 10.00 8.00 15.50 12.50
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.25 11.50 2.00 1.95 2.90 2.25 1.60 2.75 2.35 3.00 7.25	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4. 4. 4.	250 \$9 75 11 00 9 50 27 75 12 775 15 60 18 75 22 00 4 60 4 650 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	3	31/ ₂ 4.00 \$ 7.50 \$ 9.50 \$ 4.50 \$ 5.00 \$ 6.25 \$ 0.00 \$ 8.00 \$ 6.50 \$ 2.00	4 517.50 22.00 19.50
Size	2 \$3.00 3.75 3.25 4.50 9.00 4.20 5.25 11.50 6.00 7.50 2.00 2.25 2.25 2.25 1.60 2.75 2.35 3.00 7.25	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4. 4. 5.	250 \$9 75 11 00 9 00 27 75 12 775 15 15 00 18 775 22 00 4 00 4 00 4 00 5 00 5 00 5 00 5 00 5	3	31/2 4.00 \$ 7.50 \$ 9.50 44.50 8.00 6.25 6.25 0.00 8.00 6.50 2.00 9.75	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00 10.00 8.00 15.50
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.11.50 6.00 7.50 2.00 1.95 2.90 2.25 2.25 1.60 2.75 2.35 3.00 7.25 7.75 8.50	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4. 4. 5.	25 \$9 75 11 00 9 50 27 75 12 775 15 60 18 75 22 60 4 60 4 65 6 60 5 25 4 75 7 70 5 70 5 70 5 70 5 70 5 70 5 70 5	3	31/ ₂ 4.00 \$7.50 7.50 \$4.50 9.50 \$4.50 8.00 \$5.00 6.25 \$6.25 0.00 2.00 9.75	4 517.50 22.00 19.50
Size. in 1½ Elbows, 90° \$2.00 " Reducing. 2.50 " 45° 2.20 " Street. 3.60 " Bide Outlet. 6.00 Tees. 2.80 " Reducing. 3.50 " 4-way. 7.40 Crosses. 4.00 " Reducing. 5.00 Bushings. 1.40 Plugs, Regular. 1.30 " Solid. 1.90 " Countersunk. 1.55 Locknuts. 1.10 Reducers. 1.90 Couplings. 1.60 " R and L 2.10 Return Bends, Close. 4.90 " Open. 5.40 Y Bends. 5.70 Unions, Semi-finished. 3.00	2 \$3.00 3.75 3.25 4.50 9.00 4.20 5.25 11.50 6.00 7.50 2.90 2.25 2.25 1.60 2.75 2.35 3.00 7.25 7.75 8.50	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4. 4. 5.	250 \$975 111 00 9 2775 1250 2775 15 15 22 20 4 4 50 6 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 10 7 7 5 7 5 10 7 7 5 7 5 10 7 7 5 7 5 10 7 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 10 7 5 7 5 7 5 10 7 5 7 5 7 5 10 7 5 7 5 7 5 10 7 5 7 5 7 5 10 7 5 7 5 7 5 10 7 5 7 5 7 5 7 5 10 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7	3	31/2 4.00 \$ 7.50 \$ 9.50 4.50 \$ 5.00 6.25 6.25 6.25 6.25 0.00 \$ 8.00 6.50 2.00 9.75 \$ \$2.50	4 17.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 13.00 10.00 8.00 15.50
Size	2 \$3.00 3.75 3.25 4.50 5.40 9.00 4.20 5.11.50 6.00 7.50 2.00 1.95 2.90 2.25 2.25 1.60 2.75 2.35 3.00 7.25 7.75 8.50	21 \$5. 6. 6. 7. 9. 11. 13. 3. 4. 4. 4. 5.	250 \$975 111 00 9 2775 1250 2775 1550 1875 2200 4450 650 6510 775 1500 1875 1500 1500 1500 1500 1500 1500 1500 15	3	31/2 4.00 \$ 7.50 \$ 9.50 \$ 4.50 \$ 8.00 \$ 6.25 \$ 0.00 \$ 9.75 \$ \$ 2.50	4 517.50 22.00 19.50 24.50 30.50 35.00 44.00 8.00 8.00 13.00 10.00 8.00 10.00 1

Right and Left Elbows, and Right and Left Return Bends will be furnished at an advance of 25 per cent over above list prices.

Elbows, Tees, Crosses, Bushings and Reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.

Nickel-plated Brass Screwed Steam Fittings

Iron Pipe Size, Polished and Buffed

For 125 Pounds Steam Working Pressure







45° Elbow



Bend	Cr	
Price.		**

		Dulas	F.	l.			
Ci1	1/	Price					
Size, inches	1/8	1/4	3/8	1/2	3/4	1	11/4
	\$.36	\$.42	\$.53	\$.65	\$.87		\$1.75
neunting		.52	.65	.82	1.10	1.60	2.15
40	.45	.53	.65	.78	1.00	1.43	1.95
Ducet,	. 54	. 60	.73	.95	1.23	1.65	2.55
Drop, renare			1.00	1.25	1.65	2.30	3.20
Side, Oditet	F0.		1.60	2.00	2.60	3.75	5.35
Tees	.50	.58	.75	.93	1.22	1.70	2.45
neducing		.72	.50	1.15	1.50	2.10	3.00
Drop, remaie			1.33	1.62	2.15	2.95	
x-way	70			2.35	3.05	4.35	6.35
Ulussus	.72		1.05	1.30	1.75	2.50	3.50
neutring.			1.30	1.65	2.15	3.15	4.35
Dusinings		.26	.32	.42	.55	.82	1.15
1 1ugo	.28	.37	. 45	.52	.67	.90	1.20
Sond Plugs.			.51	.59	.77	1.05	1.55
Countersung 110gs				. 49	. 63	.92	1.30
Caps	.23	.29	.36	.47	.63	.89	1.25
Lock-nuts	.29	.30	.39	.48	. 60	.77	1.00
neducers		.42	.53	. 65	.87	1.20	1.75
Coupings	.29	.33	.42	.53	. 72	1.00	1.45
R. O. D.		.44	.55	.67	.92	1.30	1.85
Return Bends, Close" Open "				1.85	2.40	3.10	4.40
Ohen				1.95	2.50	3.25	4.75
Y Bends "		* + + +		1.90	2.50	3.50	5.10
Size inches	11/2	2	21/		3	31/2	4
Elbows ea. \$2	2.25	\$3.35	\$6.1	5 \$10		16.00	
" Reducing "	2.85	4.15	7.6		.50	20.00	25.00
	2.55	3.65	6.8		.00		22.50
	3.35	4.90					
	1.10	6.00					
" Side, Outlet "	6.80	10.00	18.5		.00		
Tees	3.15	4.65	8.6	55 14	.00	22.30	28.00
" Reducing . " 3	3.95	5.85	10.9			28.00	35.00
" Drop, Female "							
	3.20	12.50					
	1.50	6.70	12.3			32.00	40.00
" Reducing "	5.70	8.30	15.4			40.00	50.00
	1.65	2.35	3.5	50 5	. 15	7.10	9.00
	1.55	2.30	3.5	60 4	.90	7.10	9.00
	2.15	3.25	5.0	00 7	.15	10.85	14.00
	1.75	2.55					
	1.75	2.60	4.5	6 6	.15	8.85	11.00
	.30	1.85	3.7		.40	7.35	9.00
	2.15	3.10	5.4	8 01	.00	14.00	18.00
	1.80	2.60	4.5	6 6	.50	11.25	14.25
	2.35	3.35	5.7	5 8	.50		
	5.70	8.25					
	5.20	8.75	16.2	5 23	.00		
Y Bends " 6	5.50	9.50	17.5	0 28	.00		46.00

Right and left elbows and right and left return bends will be furnished at an advance of 25 per cent over above list prices.

*Elbows, tees, crosses, bushings and reducers, reducing more than two sizes will be furnished at an advance of 25 per cent over above reducing list prices.

Finished Brass Railing Fittings No. 1 Elbano



	IAO.	LIDOWS	
•	Price	Size	Price
es	Each	Inches	Each
	\$.40	11/4	\$1.20
	.60	$1\frac{1}{2}$	1.60
	.80	2	2.50

No. 2 Side Outlet Elbows

Size

Size Inches	Price Each	Size Inches	Price Each
$\frac{1}{2}$ $\frac{3}{4}$	\$.75 1.00	$\frac{11/4}{11/2}$	\$1.70
1	1.10	2	3.00





	No. 3	Tees	
Size Inches	Price Each	Size Inches	Price Each
1/2 3/4	\$.60 .85	$\frac{11/4}{11/2}$	\$1.70 2.00
1	1.10	2	3.00

No. 4 Side Outlet Tees







	No. 5	Crosses	
Size Inches	Price Each	Size Inches	Price Each
$\frac{1/2}{3/4}$	\$1.05 1.25 1.50	$\frac{11/4}{11/2}$	\$2.00 2.40 3.50

No. 6 Side Outlet Crosses

Size	Price	Size	Price
Inches	Each	Inches	Each
1/2	\$1.20	11/4	\$2.25
1 3/4	1.45	1½	3.00
	1.70	2	4.00





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Rus Sus	
	1

		No.	Flanges	
	Size Inches	Price Each	Size Inches	Price Each
Pas	1/2	\$.26	11/4	\$.70
	3/4	.35	11/2	. 95
	1	.40	2	1.30

No. 8 Square Floor Flanges

Size Inches	Price Each	Size Inches	Price Each
1/2 3/4	\$.75		\$1.35
3/4	.90 1.00	$\frac{11/4}{11/2}$	1.75 2.50
	1.00	4	2.30





	No.	9	Male	or	Female	Acorns
7	Size Inches		Price Each		Size Inches	Price Each
	1/2 3/4		\$.75 .90		11/4	\$1.35 1.75
•	1 4		1.00		2 2	2.50

In ordering railing fittings, describe kind wanted by number and size.

Railing fittings will always be furnished with all openings tapped right-hand, unless otherwise specified. Railing fittings tapped right and left or left-hand will be charged for at 15 per cent additional, net.

Brass Globe and Angle Valves

Brass Disc

For Steam Working Pressures: 3 Inches and Smaller, 125 Pounds 31/2 and 4 Inches, 100 Pounds



Brass Cross Valves

Brass Disc

For Steam Working Pressures: 3-Inch and Smaller, 125 Pounds 31/4 and 4-Inch, 100 Pounds



The construction of these valves is such that they may be packed when wide open, under pressure without steam escaping.

This valve is well proportioned, of good height, and sufficiently strong to stand steam working pressures, as given.

Size Inches	Price Each Screwed	Size Inches	Price Each Screwed
1/4 3/8	\$1.25 1.25	$\frac{1^{1}/_{4}}{1^{1}/_{2}}$	\$3.50 5.00
1 3/4	1.50 2.00 2.50	$\frac{2}{2^{1/2}}$	8.00 16.00 24.00

Brass Globe and Angle Valves

With Composition Discs

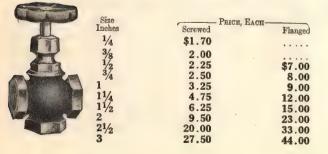
For 150 Pounds Steam Working Pressure



Brass Cross Valves

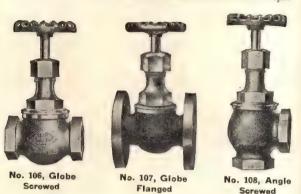
For 150 Pounds Steam Working Pressure

With Composition Discs



Jenkins Bronze Globe and Angle Valves

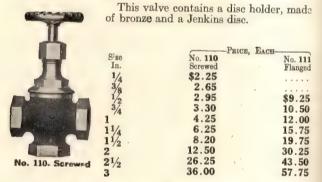
For 150 Pounds Steam Working Pressure, 250 Pounds Water



Jenkins Valves represent a distinct type as compared with the regrinding, bevel or flat-seated valves. Instead of using a solid metal clapper, they contain a disc holder, made of bronze or other suitable metal, and a removable disc, made of a softer material, preferably the Jenkins Composition Disc. The Jenkins disc in service presents a slightly yielding surface to the valve seat, and is flexible enough to adapt itself to any slight inequalities in the seat, thus insuring perfect contact.

Jenkins Bronze Cross Valves

For 150 Pounds Steam Working Fressure, 250 Pounds Water



Jenkins Composition Discs

Made in several grades as follows: No. 93, a tough flexible disc for cold water, air and gas 50 to 250 pounds pressure or hot water 200° up to 50 pounds

pressure. No. 110, a semi-hard disc for hot water 250° up to 250 pounds pressure or cold

water 250 to 400 pounds pressure.

No. 119, a dark red disc flexible under steam pressure, for saturated steam 150 pounds pressure not exceeding 366°.

			O COLL CALO	Proportio	HOL CYCC	outing of	. 00
Size In.	Price Each	Size In,	Price Each	Size In.	Price Each	Size In,	Price Each
1/4 3/8	\$.06 .08	21/	\$.36	6	\$2.00	16	\$8.00
	.08	$\frac{21/2}{3}$.48	8	2.40 2.80	18 20	10.00
3/4	.10	3½ 4	1.00	9	3.60	22	15.00
11/4	.18	41/2	1.40	10 12	4.50 5.00	24	18.00
11/2	.24	5	1.60	14	7.00		

Lunkenheimer Bronze Globe, Angle and Cross Valves

Regrinding, Union Bonnet

For 200 Pounds Steam Working Pressure





No. 407, Globe

No. 408, Angle

Seating surfaces are regrindable; disc and all other parts are renewable; stuffing box can be repacked when valves are under pressure and full open.

In the ½-inch and smaller sizes, disc and stem are integral; the stuffing box is provided with a gland follower in sizes ¾-inch and larger, and a round slotted bonnet ring and plain rim handwheel instead of the hexagon ring and ball handwheel are furnished in sizes 2½-inch and larger.

CH .	SCREY	WED, PRICE			Screy	WED, PRICE,	EACH
Size Inches	No. 407 Globe	No. 408 Angle	No. 588 Cross	Size	No. 407 Globe	No. 408 Angle	No. 588 Cross
1/8	\$.70	\$.70	\$1.00	11/2	\$3.90	\$3.90	\$5.10
3/6	.70 .85	.70 .85	1.00	$\frac{2}{2^{1/2}}$	6.20	6.20	8.00
1/8 1/4 3/8 1/2 3/4	1.15	1.15	1.50	3	16.50	12.00 16.50	16.00 24.00
3/4	1.45	1.45	2.00	31/2	30.00	30.00	38.00
11/4	2.00	2.00	2.70 3.50	4	40.00	40.00	50.00
- /4			0.00	2 4 4			0 0 0 mm

Lunkenheimer Bronze Globe, Angle and Cross Valves

Regrinding, Union Bonnet

For 300 Pounds Steam Working Pressure





No. 409, Globe

No. 557, Angle

Seating surfaces are regrindable; disc and all other parts are renewable; stuffing box can be repacked when valves are under pressure and full open.

In the $\frac{1}{2}$ -inch and smaller sizes, disc and stem are integral; the stuffing box is provided with a gland follower in sizes $\frac{3}{4}$ -inch and larger, and a round slotted bonnet ring and plain rim handwheel instead of the hexagon ring and ball handwheel are furnished in sizes $2\frac{1}{2}$ -inch and larger.

G" -	SCRE	WED, PRIC			Screv	VED, PRICE,	EACH
Size Inches	No. 409 Globe	No. 557 Angle	No. 620 Cross	Size Inches	No. 409 Globe	No. 557 Angle	No. 620 Cross
1/4	\$.90	\$.90	\$1.20	11/2	\$7.10	\$7.10	\$8.60
3/8	1.10	1.10	1.30	2	10.90	10.90	13.10
1/4 3/8 1/2 3/4	1.50 2.30	1.50	1.90	$\frac{2^{1/2}}{3}$	19.50	19.50	23.40
1 12	3.60	3.60	4.50	31/2	29.00 42.30	29.00 42.30	34.50
11/4	5.10	5.10	6.30	4	53.90	53.90	

Lunkenheimer Bronze Globe and Angle Valves

Regrinding, Union Bonnet For 150 Pounds Steam Working Pressure





No 580, Globe

No. 581, Angle

In the ½-inch and smaller sizes, the disc and stem are integral; the stuffing box is provided with a gland follower in sizes ¾-inch and larger, and a round slotted bonnet ring and plain rim handwheel instead of the hexagon ring and ball handwheel are furnished in sizes 2½-inch and larger.

Size	Face to	Center	Diam.	FLANGED, PE	ICE, EACH
Inches	Face Inches	to Face Inches	Flanges	No. 580	No. 581
		Inches	Inches	Globe	Angle
3/8	27/8	1 33	$2\frac{1}{2}$	\$2.80	\$2.80
1/2	35/8	$1\frac{31}{32}$	3	3.40	3.40
3/4	43/16	$2\frac{1}{4}$	$3\frac{1}{2}$.	4.70	4.70
1	49/8	$2\frac{17}{32}$	4	5.80	5.80
1/4	4/8	213/6	$4\frac{1}{2}$	8.00	8.00
11/2	5 /8	$3\frac{3}{32}$	5	11.00	11.00
2	67/8	35/8	6	14.50	14.50
$2^{1/2}$	713/6	436	7	24.00	24.00
3	8/18	$4\frac{1}{2}$	71/2	29.00	29.00
31/2	93/6	516	$8\frac{1}{2}$	45.00	45.00
4	101/8	5/18	9	63.00	63.00

Lunkenheimer Bronze Globe and Angle Valves

Regrinding, Union Bonnet For 200 Pounds Steam Working Pressure







No. 407, Globe

No. 408, Angle

Seating surfaces are regrindable; disc and all other parts are renewable; stuffing box can be repacked when valves are under pressure and full open.

In the ½-inch and smaller sizes, disc and stem are integral; the stuffing box is provided with a gland follower in sizes 34-inch and larger, and a round slotted bonnet ring and plain rim handwheel instead of the hexagon ring and ball handwheel are furnished in sizes 21/2-inc and larger

Size Inches	Screwed, No. 407 Globe	PRICE, EACH No. 408 Angle	Size Inches	Screwed, No. 407 Globe	PRICE, EACH No. 408 Angle
1/8	\$.70	\$.70	$\frac{11}{2}$	\$3.90	\$3.90
3/8	.70 .85	.70 .85	21/2	6.20 12.00	6.20 12.00
1/2 3/4	1.15 1.45	1.15 1.45	3 3 1/2	16.50 30.00	16.50 30 00
1	2.00	2.00	4	40.00	40.00
11/4	2.80	2.80	* * *		

Lunkenheimer Renewo Bronze Globe, Angle and Cross Valves Union Bonnet

For 200 Pounds Steam Working Pressure





No. 73, Globe

No. 72, Angle

Seating surfaces are regrindable; the Valve-nickel seat and disc and all other parts are renewable.

In the ½-inch and smaller sizes, the disc locknut is omitted, the back of the Valve-nickel swivel disc being burnished over the head of the stem; the stuffing box is provided with a gland follower in sizes ¾-inch and larger; a slotted bonnet ring is furnished instead of the hexagon ring on sizes 2-inch and larger; self-cooling malleable iron handwheel is provided on sizes up to 2-inch, inclusive, larger sizes having plain rim handwheel.

		WED, PRICE,			Scren	WED, PRICE.	EACH
Size Inches	No. 73 Globe	No. 72 Angle	No. 71 Cross	Size Inches	No. 73 Globe	No. 72 Angle	No. 71 Cross
1/4	\$1.10	\$1.10	\$1.70	11/4	\$4.00	\$4.00	\$4.75
1/4 3/8 1/2	1.25	1.25	2.00	11/2	5.50	5.50	6.25
1/2	1.60	1.60	2.25	2	8.75	8.75	9.50
3/4	2.20	2.20	2.50	$2\frac{1}{2}$	15.75	15.75	20.00
1	2.80	2.80	3.25	3	22.00	22.00	27.50

Lunkenheimer Renewo Bronze Globe, Angle and Cross Valves Union Bonnet

For 300 Pounds Steam Working Pressure





No. 16, Globe

No. 17. Angle

Seating surfaces are regrindable; the Valve-nickel seat and disc and all other parts are renewable.

In the ½-inch and smaller sizes, the disc locknut is omitted, the back of the Valve-nickel swivel disc being burnished over the head of the stem; the stuffing box is provided with a gland follower in sizes ¾-inch and larger; a slotted bonnet ring is furnished instead of the hexagon ring on sizes 2-inch and larger; self-cooling malleable iron handwheel is provided on sizes up to 1½-inch, inclusive, larger sizes having plain rim handwheel.

Screwed, Price, Each					SCREWED, PRICE, EACH			
Size Inches	No. 16 Globe	No. 17	No. 18 Cross	Size Inches	No. 16	No. 17	No. 18	
		Angle	\$2.10		Globe	Angle	Cross	
1/4	\$1.60	\$1.60		11/4	\$6.50	\$6.50	\$7.80	
1/ ₄ 3/ ₈ 1/ ₂	1.70 2.50	1.70 2.50	2.30	$\frac{11/2}{2}$	9.00	9.00	10.50	
7/2	2.30	2.50	3.40	2	14.00	14.00	16.00	
3/4	3.80	3.80	4.60	$2^{1/2}$	25.00	25.00	29.00	
1	4.90	4.90	6.00	3 2	36.00	36.00	42.00	

Lunkenheimer Renewo Bronze Globe and Angle Valves

Union Bonnet

For 150 Pounds Steam Working Pressure





No. 70, Globe

No. 69, Angle

In the % and ½-inch sizes, the disc locknut is omitted, the back of the Valve-nickel swivel disc being burnished over the head of the stem; stuffing box is provided with a gland follower in sizes ¾-inch and larger; a slotted bonnet ring is furnished instead of the hexagon ring on sizes 2-inch and larger; self-cooling malleable iron handwheel is provided on sizes up to 2-inch, inclusive, larger sizes having a plain rim handwheel.

	Face to	Center	Diam.	FLANGED, P	RICE, EACH
Size In.	Face Inches	to Face Inches	Flanges Inches	No. 70 Globe	No. 69 Angle
3/8	3	$1\frac{21}{32}$	21/2	\$4.00	\$4.00
1/2	31/16	$1\frac{31}{32}$	3	4.00	4.00
3/4	4	$2\frac{1}{4}$	$3\frac{1}{2}$	5.00	5.00
1 ,	4 9/16	$2\frac{17}{32}$	4	6.00	6.00
11/4	5 ½6 612	2 %	$\frac{4\frac{1}{2}}{5}$	9.00	9.00
2	71/	35%	6 6	11.00 16.50	11.00
21/2	8	43%	7	25.00	16.50 25.00
3	9	41/2	71/2	34.00	34.00

Lunkenheimer Renewo Bronze Globe and Angle Valves

Union Bonnet

For 250 Pounds Steam Working Pressure





No. 19, Globe

No. 20, Angle

In the 3% and ½-inch sizes the back of the Valve-nickel swivel disc is burnished over the head of the stem; the stuffing box is provided with a gland follower in sizes ¾-inch and larger; a slotted bonnet ring is furnished on sizes 2-inch and larger; self-cooling malleable iron handwheel is provided on sizes up to 1½-inch, inclusive, larger sizes having plain rim handwheel

handw	heel.				
	Face to	Center	Diam.	FLANGED, PI	RICE. EACH
Size	Face	to Face	Flanges	No. 19	No. 20
In.	Inches	Inches	Inches	Globe	Angle
3/8	31/2	$2\frac{3}{32}$	3	\$7.00	\$7.00
1/2	33/4	2 32	31/2	7.50	7.50
3/4	41/2	29/6	4	10.00	10.00
1	51/6	27/8	41/2	12.00	12.00
11/4	59/16	$3\frac{5}{32}$	5	16.00	16.00
11/2	7	311/6	6	23.50	23.50
2	8	4 .	$6\frac{1}{2}$	34.00	34.00
21/2	9	496	$7\frac{1}{2}$	48.00	48.00
3	10	57/16	81/4	68.00	68.00

Lunkenheimer Bronze Renewo Full-way Type Globe and Angle Valves

Union Bonnet, Renewable Monel Seat and Disc For 200 Pounds Steam Working Pressure







No. 1559, Angle

Service conditions oft-times require the installation of a valve which at times can be used as a throttle (partly open) and at other periods will permit of a full way opening.

The monel metal seat and disc of the valves hereon illustrated are especially constructed to resist to the greatest possible degree, the wear incident to wire drawing, which occurs when the valves are used for throttling purposes.

	Screwed, Pr			SCREWED, P	RICE, EACH
Size	No. 1523	No. 1559	Size	No. 1523	No. 1559
In.	Globe	Angle	In.	Globe	Angle
1/4	\$5.50	\$6.00	11/4	\$13.00	\$14.50
3/8	6.00	6.60	11/2	17.00	18.75
1/2	6.50	7.25	2	24.00	26.50
3/4	7.50	8.25	21/2	45.00	50.00
1	9.50	10.50	3	65.00	75.00

Lunkenheimer Bronze Renewo Full-way Type Globe and Angle Valves

Union Bonnet, Renewable Monel Seat and Disc For 300 Pounds Steam Working Pressure



No. 1524, Globe



No. 1560, Angle

Service conditions of t-times require the installation of a valve which at times can be used as a throttle (partly open) and at other periods will permit of a full way opening.

The monel metal seat and disc of the valves hereon illustrated are specially constructed to resist to the greatest possible degree, the wear incident to wire drawing, which occurs when the valves are used for throttling purposes.

	Screwed, P.			SCREWED, P.	RICE, EACH
Size	No. 1524	No. 1560	Size	No. 1524	No. 1560
In.	Globe	Angle	In.	Globe	Angle
1/4	\$7.00	\$7.70	1	\$12.00	\$13.25
1/4 3/8 1/2 3/4	7.50	8.25	11/4	15.50	17.00
1/2	8.00	8.80	11/2	20.00	22.00
3/4	9.50	10.50	2	33.00	37.00

Lunkenheimer Bronze Renewo Throttling Type Globe and Angle Valves

Union Bonnet, Renewable Monel Seat and Disc For 200 Pounds Steam Working Pressure



No. 1521, Globe



No. 1561, Angle

The seat opening in these valves is reduced to approximately that of the inside diameter of one size smaller pipe than that of the valve size.

Lunkenheimer Throttling Type Renewo Valves are intended for such service where a restricted flow is at all times required. Particularly are they adapted for installation where the flow contains grit or consists of hot water or heavily saturated steam and where the educed seat opening sufficiently throttles the flow permitting the disc to be raised to its limit, thereby eliminating the severe wear caused by wire drawing between the seating surfaces when the valves are but slightly open.

	SCREWED, P	RICE, EACH		SCREWED, PRICE, EACH	
Size	No. 1521	No. 1561	Size	No. 1521	No. 1561
In.	Globe	Angle	In.	Globe	Angle
1/4	\$8.00	\$9.00	1	\$11.50	\$12.75
1/4 3/8 1/2 3/4	8.25	9.25	11/4	15.50	17.25
1/2	8.50	9.50	11/2	19.50	21.50
3/4	9.50	10.50	2	26.50	29.50

Lunkenheimer Bronze Renewo Throttling Type Globe and Angle Valves

Union Bonnet, Renewable Monel Seat and Disc For 300 Pounds Steam Working Pressure



No. 1522, Globe



No. 1562, Angle

The seat opening in these valves is reduced to approximately that of the inside diameter of one size smaller pipe than that of the valve size.

than that of the valve size.

Lunkenheimer Throttling Type Renewo Valves are intended for such service where a restricted flow is at all times required. Particularly are they adapted for installation where the flow contains grit or consists of hot water or heavily saturated steam, and where the reduced seat opening sufficiently throttles the flow permitting the disc to be raised to its limit, thereby eliminating the severe wear caused by wire drawing between the seating surfaces when the valves are but slightly open.

Size	Screwed, I No. 1522	No. 1562	Size	Screwed, P. No. 1522	No. 1562
In.	Globe	Angle	In.	Globe	Angle
1/4	\$9.50	\$10.50	1	\$14.50	\$16.00
3/8	9.75	10.75	11/4	18.00	20.00
1/4 3/8 1/2 3/4	10.00	11.00	$\frac{1^{1/4}}{1^{1/2}}$	22.50	25.00
3/4	11.50	12.75	2	35.50	40.00

Lunkenheimer Bronze Needle Valves

With Gland Only **Bronze Stem**

For 200 Pounds Pressure







Sectional View



With Indicator Wheel and Union Nos. 1567 & 1568

Nos. 1205 & 1206

These valves are provided with gland follower in stuffing box and are furnished with bronze stem only.

The ¼, ¾, ½ and ¾ inch sizes have been approved by the Underwriters' Laboratories, Inc., for control of hazard-ous liquids. The Underwriters' Laboratories, Inc., prescribe 50 pounds per square inch as the maximum pressure for hazardous liquid equipment.

Diam, of	BALL WHEN	EL PATTERNS	INDICATOR WHEE	T. PATTERNS
Sleat	FEMAL	m Earna		
Open-		No. 1206	No. 1567	No. 1568
ings. In.	· Globe	Angle	Globe	Angle
-0-1				ungio
8,6	\$3.00	\$3 15	\$7.00	\$7.25
479	V			91.23
1/4	3.30	3.50	8.00	8.30
87			0100	0.00
2/18	4.00	4.40		
7/	E EO	C 00		
76	ວ.ວບ	6.00	1 1 1 1	
9/	9 00	0 50		
716	3.00	ə. əu		
	Diam. of Seat Open- ings, In.	Seat No. 1205	Diam. of Seat Seat Open-ings, In. BALL WHEEL PATTERNS No. 1205 No. 1206 Globe Angle Sa. 00 Sa. 15 Sa. 00 Sa. 00	Seat Openings, In. No. 1205 No. 1206 Globe No. 1205 No. 1206 No. 1567 Globe No. 1567 Globe 3 8 3.00 \$3.15 \$7.00 3.30 3.50 \$8.00 4 3.30 3.50 \$8.00 4.40 5 5 50 6.00 5.50

Lunkenheimer Bronze Needle Valves

Without Gland

Bronze or Steel Stem



No. 906, Globe



No. 909, Globe With Union



No. 907, Angle

The Lunkenheimer standard for the included angle of the tapered seating face at end of stem is 30°.

Valves with steel stem have smaller seat openings than valves with bronze stem and provide finer regulation. Diameters of seat openings are given below.

Bronze Stem, Rough Body

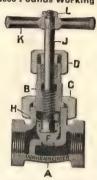
					3	
				-PRICE, EACH		
	D!-	,		-I RIUE, EACH		
	Diam.				T/2	TT
	Seat "		73 73		FEMAL.	E UNION
	isea li		-FEMALE ENDS	-	037 ()	UTLET
Size	Openings	No. 906			ON U	
Diano			No. 907	No. 908	No. 909	No. 910
In.	Inches	Globe	Angle			
		CITODO	vrnRia	Cross	Globe	Angle
1/	1/	An 40	An M.			Ordinas
1/8	1/8	\$2.40	\$2.50	\$3.75	\$3.50	62 60
17	69			φα. 13	40.00	\$3.60
1/4	9/10	2.50	2.65	4 00		
14	216	2 - 00	2.03	4.00	3.80	4.00
3/2	1.	2.80	2 00	W 00		
78	74	4.00	3.00	5.00	4.50	4.75
1/	87	D 150			*.00	4.10
$\frac{1/4}{3/8}$ $\frac{1}{2}$	216	3.50	3.80	7.00	6.50	0.00
/	. 20		0.00	1.00	0.00	6.80
		C1	C			
		Steel	Stem, Ro	ough Bod	16	

				. rougi	· Dody		
Size In. 1/8 1/4	Seat Openings Inches	PRICE, FEMAL	EACH		Seat Openings Inches	FEMALI	EACH ENDS No. 907 Angle \$3.50

Lunkenheimer High Duty Bronze Globe and Angle Valves

Regrinding For Liquids, Air and Gases

For 2000 Pounds Working and 4000 Pounds Non-shock Pressures



No. 720, Globe



No. 721, Angle

The seating surface is regrindable; disc and all other parts are renewable. Area throughout the body is in excess of that of the connecting pipe. The stuffing box can be repacked when valve is under pressure and full open. Union connection between the body and bonnet strengthens the neck of the body and facilitates assembling and disassembling for regrinding or repairs. Disc in check valve is well guided and perfect seating is insured.

Size	SCREWED, I	RICE, EACH	-	Screwed, I	RICE, EACH
Inches	Globe	No. 721 Angle	Size Inches	No. 720 Globe	No. 721 Angle
1/4 3/8	\$7.60	\$7.60	1	\$19.50	\$19.50
1/2	8.30 10.50	8.30 10.50	$\frac{1^{1}/_{4}}{1^{1}/_{2}}$	32.00 45.00	32.00
3/4	15.00	15.00	2	70.00	45.00 70.00

Lunke theimer High Duty Bronze Check Valves

Regrinding For Liquids, Air and Gases

For 2000 Pounds Working and 4000 Pounds Non-shock Pressures



No. 815, Horizontal



No. 816, Angle

The seating surface is regrindable; disc and all other parts are renewable.

The area throughout the body is in excess of that of the connecting pipe. The stuffing box can be repacked when valve is under pressure and full open.

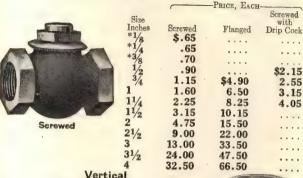
Union connection between the body and bonnet strengthens the neck of the body and facilitates assembling and disassembling for regrinding or repairs.

The disc in check valve is well guided, and perfect seating

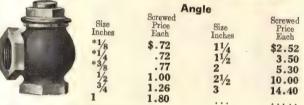
Size Inches 1/4 3/8	SCREWED, P No. 815 Horizontal \$4.10 4.60	No. 816 No. 816 Angle \$4.10 4.60	Size Inches 1 1 ¹ / ₄	Screwed, Pa No. 815 Horizontal \$11.00 17.50	No. 816 Angle \$11.00 17.50
$\frac{1}{2}$ $\frac{3}{4}$	5.50	5.50	1½	23.50	23.50
	8.60	8.60	2	38.00	38.00

Brass Check Valves

Brass Discs
For Steam Working Pressures: 3 Inch and Smaller, 125 Pounds;
31/2 and 4 Inch, 100 Pounds
Horizontal



		rtical	
Size Inches	Screwed Price Each	Size Inches	Screwed Price Each
*1/8 *1/4 *3/	\$.72 .72	11/4 11/2	\$2.52 3.50
1/2 3/4	.77 1.00 1.26	2 2 ¹ / ₂	5.30 10.00
1 14	2.52	3	14.40



*These sizes are ball pattern.

Brass Swing Check Valves With Brass or Leather Disc

For Working Pressures: Brass Disc, 125 Pounds Steam; Leather Disc, 175 Pounds Water

May be used in a horizontal position or for unward flow

OT I	of for apward now.					
	SCRD., PRI	ICE, EACH		SCRD., PRI	CE. EACH	
	With	With		With	With	
Size	Brass	Leather	Size	Brass	Leather	
In.	Disc	Disc	In.	Disc	Disc	
3/8	\$1 80	\$2.40	11/2	\$4.75	\$6.00	
$\frac{1/2}{3/4}$	2.00	2.65	2	6.75	8.15	
3/4	2.25	2.90	21/2	15 00	0.10	
1 1	2 80	3 60				
41/			3	24.00		
11/4	3.65	4.65				



Valves for cold water preferably should have leather discs. For hot water or steam, brass discs should be used. Unless otherwise specified on order, swing check valves will be furnished with brass discs.

No. 614 Lunkenheimer Bronze Swing Joints

Hexagon End Pattern For 100 Pounds Gas or Liquid Pressure



Inlet and outlet ends are regularly furnished threaded for same size pipe.

The flow ports are open regardless of the relative position of the inlet and outlet ends.

Swing joints finished all over are procurable on special order at prices varying with quantities.

Size Inches 1/4 3/8 1/2	Price, Each Part Fin. \$1.90 2.20 2.50	Size Inches 3/4 1 11/4	Price, Each Part Fin. \$3.50 5.00 6.50	Size Inches 11/2 2	Price, Each Part Fin. \$9.00 15.40
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Lunkenheimer Bronze Check Valves

Horizontal, Angle and Vertical Regrinding, Screwed Cap

For 200 Pounds Steam Working Pressure





No. 414, Horizontal

No 415, Angle

Seating surfaces are regrindable; all parts are renewable; areas throughout the body are in excess of that of the connecting pipe; the disc is well guided at both the top and bottom, insuring perfect seating.

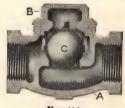
On the 2½-inch and larger sizes, a round slotted cap is provided instead of the hexagon cap shown.

CI.		-Screwed, Price, Each-	
Size	No. 414	No. 415	No. 418
Inches	Horizontal	Angle	Vertical
1/8	\$.50	\$.50	1
1/4	.50	.50	\$.50
3/2	.60		. 50
17		. 60	. 60
72	. 85	. 85	.85
3/4	1.15	1.15	1.15
1	1.55	1.55	1.55
11/4	2.30	2.30	
$\frac{11/2}{2}$	3.25	3.25	2.30
2 "			3.25
01/	5.20	5.20	5.20
2½ 3	10.00	10.00	10.00
3	14.00	14.00	14.00
$3\frac{1}{2}$	19.75	19.75	
4	30.75		19.75
-	30.73	30.75	30.75

Lunkenheimer Bronze Ball Check Valves

Horizontal, Angle and Vertical Screwed Cap

For 200 Pounds Steam Working Pressure







No. 416 Horizontal

No. 739 Angle

No. 740 Vertical

These valves embody features essential to successful operation under service conditions for which the ball type of check valve is suitable.

The non-ferrous metal balls are manufactured under the most modern method, each is specially gauged and the guide is designed to minimize wear.

0		•	
Size	No. 416	— Screwed, Price, Each— No. 739	No. 740
Inches	Horizontal	Angle	Vertical
1/8	\$.85	\$.85	\$.85
1/4	.95	.95	.95
3/8	1.10	1.10	1.10
1/2	1.60	1.60	1.60
3/4	2.30	2.30	2.30
1	3.50	3.50	3.50
11/4	5.30	5.30	5.30
11/2	7.50	7.50	7.50
2	11.50	11.50	11.50
21/2	18.00	18.00	18.00
3	27.00	27.00	27.00

No. 554 Lunkenheimer Bronze Swing Check Valves

Regrinding, Screwed Cap For 200 Pounds Steam Working Pressure



The seating surfaces are regrindable and all parts are renewable. Two side plugs are provided which act as bearings for the disc carrier pin and these being also renewable, the perfect seating of the disc can at all times be maintained. The valves may be connected in either a horizontal or vertical position.

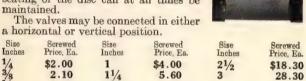
Size Inches 1/4 3/8 1/2 3/4	Screwed Price, Ea. \$1.25 1.25 1.30 1.75	Size Inches 1 11/4 11/2 2	Screwed Price, Ea. \$2.25 3.25 4.25 6.25	Size Inches 21/2 3	Screwed Price, Ea. \$11.50 16.00
778	4	-	0.20	* * * *	

No. 624 Lunkenheimer Bronze Swing Check Valves

Regrinding, Screwed Cap For 300 Pounds Steam Working Pressure

The seating surfaces are regrindable and all parts are renewable.

Two side plugs are provided which act as bearings for the disc carrier pin and these being also renewable, the perfect seating of the disc can at all times be



Jenkins Bronze Rapid Action Valves

7.50

11.00

Renewable Composition Disc

2.20

2.90

Bronze spindle with hardened steel tip, steel yoke, malleable iron lever with cam hardened.



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			-		
Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/2 3/4	\$7.00	11/4	\$12.00	21/2	\$28.00
1 4	9.00 10.00	$\frac{11/_{2}}{2}$	15.00 20.00	***	

Brass Gate Valves

Quick Opening, Doube Disc, Parallel Seats For 125 Pounds Steam Working Pressure

This valve is of a heavy pattern. The winged nut at the top of the stem locks the disc at any desired opening.

	Screwed		Screwed
Size	Price	Size	Price
In.	Each	În.	Each
3/4	\$3.60	2	\$11.80
1	4.80	21/2	20.25
11/4	6.20	3	30.00
$1^{1/2}$	8.50		



Brass Gate Valves

Double Disc. Parallel Seats

For Steam Working Pressures: 3-Inch and Smaller, 125 Pounds; 3½-Inch and Larger, 100 Pounds



May be repacked when under pressure.

	Size	Screwed	ar.	_	
	Inches	Price Each	Size		в, Елсн
	THOUGH		Inches	Screwed	Flanged
	1/4	\$1.45	2	\$7.30	\$25.00
	3/8	1.45	$2^{1/2}$	13.00	33.00
-	1/2	1.65	3	19.00	39.00
3	3/4	2.05	*31/2	43.00	68.00
	1	2.80	*4	58.00	83.00
	11/4	3.70	*5	110.00	135.00
	$1\frac{1}{2}$	5.00	*6	165.00	190.00

*Have flanged bonnet and non-rising stem.

No. 427 Lunkenheimer Bronze Gate Valves

Double Disc, Rising Stem Inside Screw, Screwed Bonnet

For 150 Pounds Steam Working Pressure

Ball and socket bearing between discs provides greatest degree of flexibility in seating engagement, insuring a tight valve. Discs are

guided by ribs cast within body.

Stuffing box is repackable when valve is under pressure and full open. Sizes 1-inch and larger have gland in stuffing box.

All parts are renewable. Pressure can be

taken from either end. No. 427 Screwed Price, Ea. No. 427 No. 427 Screwed Price, Ea. Screwed Price, Ea In. In. \$1.10 \$2.50 \$14.00 1.10 3.50 20.00 1.30 5.00 7.50

No. 768 Lunkenheimer Bronze Gate Valves Wedge Disc, Stationary Stem, Inside Screw Screwed Bonnet

For 200 Pounds Steam Working Pressure

This valve is of the wedge disc, double seated type, permitting pressure to be taken from either end.

The disc is well guided by ribs cast within

A gland is provided in the stuffing box of the 3/-inch and larger sizes.

DITO	/4-111CH 2011	a mis	OZ DZZIOCK			
	No. 768 Screwed		No. 768 Screwed		No. 768 Screwed	
Size	Price	Size	Price	Size	Price	
In.	Each	In.	Each	In.	Each	
1/4	\$1.70	1	\$3.00	21/2	\$17.00	
3/2	1.70	11/4	4.20	3	24.00	
1/2	1.80	11/2	6.00			
3/4	2.30	2	9.00			



No. 771 Lunkenheimer Bronze Gate Valves

Wedge Disc, Stationary Stem, Inside Screw Screwed Bonnet

For 300 Pounds Steam Working Pressure

This valve is of the wedge disc, double seated type, permitting pressure to be taken from either end. The disc is well guided by ribs cast within the body.

All parts are renewable, including the seat rings on sizes 1-inch and larger. The stuffing

box is repackable under pressure when the valve is full open. A gland is provided in stuffing box of 3/4-inch and larger sizes.

CIT	No. 771	CI.	No. 771	CV!	No. 771
Size	Screwed	Size	Screwed	Size	Serewed Price, Ea.
In.	Price, Ea.	In.	Price, Ea.	In.	
1/4	\$3.75	1	\$6.40	$2\frac{1}{2}$	\$23.00
3/8	3.75	11/4	8.00	3	33.00
1/2	3.90	$1\frac{1}{2}$	10.50		
1/4 3/8 1/2 3/4	5.20	2	15.20		

Lunkenheimer Bronze Gate Valves

Wedge Disc, Rising Stem, Outside Screw Screwed Yoke Bonnet

For Steam Working Pressures: Screwed, 200 Pounds; Flanged, 150 Pounds





No. 831, Screwed

No. 832, Flanged

Being of the wedge disc, double seated type, these valves will take the pressure from either end.

The disc is well guided by ribs cast within the body.

All parts are renewable, including the seat rings on the 1-inch and larger sizes. The stuffing box is repackable under pressure when the valve is full open.

Size Inches	Face to Face Flanged Inches	Diam. Flanges Inches	No. 831 Screwed	No. 832 Flanged
1 3/4	3½ 4½	3½ 4	\$3.50 5.50	\$6.90 8.80
$\frac{11/4}{11/2}$	4 ½ 4 ½ 4 ½	$\frac{41/2}{5}$	6.30 9.00	12.00 15.50
2 21/2	$\frac{57}{8}$ $\frac{63}{4}$. 6	14.00 21.00	24.00 33.00
3	73/8	$7\frac{1}{2}$	31.00	45.00

Lunkenheimer Bronze Gate Valves

Wedge Disc, Rising Stem, Outside Screw Screwed Yoke Bonnet

For Steam Working Pressures: Screwed, 300 Pounds; Flanged, 250 Pounds





No. 834, Screwed

No. 835, Flanged

Being of the wedge disc, double seated type, these valves will take the pressure from either end.

The disc is well guided by ribs cast within the body. All parts are renewable, including the seat rings on the 1-inch and larger sizes. The stuffing box is repackable under pressure when the valve is full open.

Size Inches	Face to Face Flanged Inches	Diam. Flanges Inches	No. 834 Screwed	No. 835 Flanged
11/4	43/4 5	$\frac{41}{2}$	\$8.25 11.50	\$17.50 22.50
1½ 2 2½	$ \begin{array}{c} 5\frac{3}{4} \\ 6\frac{1}{2} \end{array} $	$\begin{array}{c} 6 \\ 6 \\ 2 \end{array}$	13.00 18.00	31.00 41.00
3	71/4	814	30.00 40.00	58.00 72.00

Brass Garden Hose Faucets





Angle Opening

Size In.	Straight Opening	Angle Opening
1/2 3/4	\$1.65 1.65	\$1.65 1.65
1 11/4	2.20 3.40	2.20
1 ¹ / ₂ 2	4.75 7.00	4.75 7.00
21/2	15.00	15.00

Furnished with Chicago hose thread California or iron pipe thread furnished at regular prices.

Other styles extra.

When ordering, specify thread required.

Chicago Pattern Brass Hose Valves



Furnished with rough body, tee handles and leather discs, in either hose or iron pipe thread on hose end and iron pipe thread on lower end invariably. The 2½-inch size only can also be had with any fire department thread in hose end.

Valves with wheel handles or with soft rubber discs at slight additional charge. Valves nickel-plated at extra charge.

Size Inches	Price Each	Size Inches	Price Each
1	\$3.15	2	\$7.00
11/4 .	3.70	21/2	8.50
11/2	4.75		

No. 15 Single Hydrant Brass Gate Valves

This gate valve is made with a full 2½-inch waterway, valve lifting out of place. It is used next to the hydrant so that one stream may be stopped without interfering with the others.

When ordering, always supply thread information to avoid delay.

Style	Description	Price Each
A	Wheel Handle, with Swivel	
\mathbf{B}_{-}	" without	+== .00
~	Swivel	22.00
C	Tee Handle, with Swivel	22.00
D	" without Swivel	22.00



No. 572 Lunkenheimer Bronze Butterfly Valves

For 125 Pounds Steam Working Pressure

Designed for use only for regulating the flow through the body. The disc construction does not permit of even a practically tight joint between the disc and seat.

Is provided with bronze disc and stuf-

fing box and with blank end steel stem. Malleable iron operating lever will be fitted to the stem and charged separately when valve is ordered with lever. Price

includes	screwed	ends.	
Size Inches	Face to Face Inches	Center of Body to Top of Stem, In.	Price Each
3/ ₄	$2\frac{5}{16}$ 2^{11} 16	$\frac{2^{13}}{16}$	\$3.10 4.40
1½ 1½	$3\frac{1}{8}$ $3\frac{5}{16}$	313/16	5.65 6.75
2	315/16	42/16	10.00



No. 430 Lunkenheimer Handy Bronze Gate Valves

For 75 Pounds Steam Working Pressure



A quick opening valve for handling water, oils, lactic and other classes of liquids and low pressure steam.

The ball and socket bearing between the discs is the most flexible and practical wedging principle and prevents many unusual conditions from interfering with the functioning of the disc.

Size Inches	No. 430 Screwed Price, Each	Size Inches	No. 430 Screwed Price, Each	Size Inches	No. 430 Screwed Price, Each
1/ ₂ 3/ ₄	\$1.60 1.80	1½ 2	\$5.00 7.50	3½ 4	\$40.00
11/4	2.50 3.50	$\frac{21/2}{3}$	13.50 19.00	***	

No. 628 Lunkenheimer Handy Iron Body Gate Valves

Bronze Mounted

For 75 Pounds Steam Working Pressure

A quick opening valve for handling water, oils, lactic and other classes of liquids and low pressure steam.

Size Inches		Face to Face Inches	No. 628 Screwed Price, Each
2	1	41/4	\$7.00
$\frac{21/2}{3}$		$4\frac{1}{2}$	12.00
		5	15.00
31/2	•	$6\frac{1}{8}$	18.00
4		65/6	21.00
4 ¹ / ₂ 5		$6\frac{1}{2}$	25.00
		7 5/16	30.00
6		$8\frac{1}{4}$	42.00
8		93/4	90.00



No. 431 Lunkenheimer Bronze Heavy Lever Gate Valves

For Working Steam Pressures Up to 175 Pounds



This valve was designed as a throttle for steam traction, hoisting and road engines, but the successful results obtained have encouraged a more extensive use.

The simple and practical ball and socket wedging principle of the disc construction provides positive seating of the discs under trying service conditions.

Size . Inches	Price, Each No. 431 Screwed	Size Inches	Price, Each No. 431 Screwed
1/2 3/4	\$2.50	11/2	\$7.00
3/4	3.00	2 2	10.00
1	4.00	21/2	19.00
11/4	5.00		

No. 432 Lunkenheimer Iron Body Heavy Lever Gate Valves

Bronze Mounted

For Working Steam Pressures Up to 3 Inches, 175 Pounds; $3\frac{1}{2}$ and 4 Inches, 125 Pounds; 5 and 6 Inches, 100 Pounds

This simple and practical ball and socket wedging principle of the disc construction provides positive seating under trying service conditions.

Sise Inches	Face to Face Inches	Price, Each No. 432 Screwed
2 2 ¹ / ₂ 3	$ \begin{array}{c} 5\frac{1}{2} \\ 6\frac{3}{6} \\ 6\frac{1}{4} \end{array} $	\$8.50 16.00 20.00
3½ 4 5	$6\overset{3}{\cancel{4}}$ $7\overset{1}{\cancel{4}}$ $8\overset{1}{\cancel{4}}$	25.00 30.00 35.00
6	$91\frac{2}{4}$	40.00



Iron Body Globe and Angle Valves



Brass Mounted With Brass Disc

For 125 Pounds Steam Working Pressure

Giol	be, Scre	wed			
	FAC		CENT	ER TO	Diam.
Size		INCHES	FACE,	INCHES	Flanges
nches	Screwed	Flanged	Screwed	Flanged	Inches
2	$6\frac{1}{2}$	8	31/4	4	6
1/2	7	$8\frac{1}{2}$	$3\frac{1}{2}$	41/4	7
3	8	$9\frac{1}{2}$	4	43/4	71/2



Angle, Screwed
PRICE, EACH
GLOBE AND ANGLE

Screwed	Flanged
\$5.40	\$7.00
7.35	9.00
9.80	12 50



Globe, Screwed

Iron Body Globe and Angle Valves

Composition Disc Brass Mounted

For 125 Pounds Steam Working Pressure



Angle, Screwed

Size	FACE TO		CENTER 7		Diam. Flanges		CE, EACH
In.	Screwed	Flanged	Screwed	Flanged	In.	Screwed	Flanged
2	$6\frac{1}{2}$	017	31/4	10.	200	\$7.25	\$8.50
$\frac{2^{1/2}}{3}$	81/4	$\frac{9\frac{1}{2}}{10}$	41/	43/4	7	11.00	13.00
G .	0/4	10	41/8	ð	71/2	16.00	18.00

Iron Body Globe and Angle Valves

With Yoke—Brass Disc and Trimmings

For 125 Pounds Steam Working Pressure



Globe, Screwed



Angle, Flanged

~.	FACE TO FACE		CENTER TO FACE		Diam.	PRICE, EACH		
Size		CHES		CHES	Flanges	GLOBE A	ND ANGLE	
Inches	Screwed	Flanged	Screwed	Flanged	Inches	Screwed	Flanged	
2	$6\frac{1}{2}$	8	$3\frac{1}{4}$	4	6	\$7.00	\$8.60	
$2^{1/2}$	7	$8\frac{1}{2}$	$3\frac{1}{2}$	41/4	7	9.00	10.75	
3	8	$9\frac{1}{2}$	4	43/4	71/2	12.50	15.00	
$3\frac{1}{2}$	49	$10\frac{1}{2}$	$4\frac{1}{2}$	51/4	81/2	15.25	18.50	
4	10	$11\frac{1}{2}$	5	$5\frac{3}{4}$	9	19.00	22.50	
41/2	$10\frac{1}{2}$	12	$5\frac{1}{4}$	6	91/4	24.00	27.50	
5	$11\frac{1}{4}$	13	$5\frac{5}{8}$	$6\frac{1}{2}$	10	27.00	31.00	
6	13	14	$6\frac{1}{2}$	7	11	37.50	42.00	
7 -	$14\frac{1}{2}$	16	71/4	8	$12\frac{1}{2}$	63.00	68.00	
8	16	17	8	81/2	$13\frac{1}{2}$	72.00	77.00	
10	$18\frac{3}{4}$	20	93/8	10	16	114.00	123.00	
12	211/4	24	$10^{5/8}$	12	19	170.00	187.00	
14		28		14	21		350.00	
16		32		16	231/2		475.00	

Iron Body Globe and Angle Valves

Composition Disc With Yoke, Brass Mounted

For 150 Pounds Steam Working Pressure







Angle, Screwed

Size In. 2½2 3 3½2	Screwed 8 8 1/4 9 1/2	TO FACE Flanged 9½ 10 11	Screwed 4 $4^{1/8}$ $4^{3/4}$	Flanged 43/4 5 5 1/2	Diam. Flanges In. 7 71/2 81/2	Screwed \$12.00 16.75 19.50	EACH ANGLE Flanged \$14.00 18.50 21.50
4½ 5	$10\frac{1}{2}$ $11\frac{1}{4}$ $12\frac{1}{4}$	$12 \\ 13 \\ 14$	$ \begin{array}{r} 5\frac{1}{4} \\ 5\frac{5}{8} \\ 6\frac{1}{8} \end{array} $	$\frac{6}{61/2}$	$9 \\ 9 \frac{1}{4} \\ 10$	24.00 32.00 40.00	26.00 34.00 42.00
6 7 8	14 17	$ \begin{array}{c} 16 \\ 18 \\ 19\frac{1}{2} \end{array} $	7 8½	8 9 9 ³ ⁄ ₄	$11 \\ 12\frac{1}{2} \\ 13\frac{1}{2}$	48.00 80.00 90.00	50.00 80.00 90.00
10 12	* * * *	$24\frac{1}{4}$ $27\frac{1}{2}$	• • •	$12\frac{1}{4}$ $13\frac{3}{4}$	16 19	130.00 185.00	130.00 185.00

Lunkenheimer Iron Body Globe and Angle Valves

Bronze Mounted, Outside Screw, Flanged Yoke
Bonnet

Bonnet For 125 Pounds Steam Working Pressure; 450° F. Total Temperature



No. 1120, Globe Screwed



No. 1121, Angle

Seating surfaces are regrindable; the seat, disc and all other parts are renewable; the stuffing box can be repacked when valves are under pressure and full open.

							22000
						No. 1120.	No. 1123,
						Globe	
	FACE TO	FACTO	CENTER	171	99.1		Globe
Size					Diam.	No. 1121.	No. 1124.
	INCE	E8	INC	HES	Flanges	Angle	
Inches	Serd.	Flgd.	Scrd.		T. TOTTROS		Angle
0				Flgd.	In.	Screwed	Flanged
2	63/2	73/4	$3\frac{3}{16}$	$3\frac{1}{8}$	6		610 00
91/	F7 2 2	00				\$11.50	\$13.00
21/2	$7\frac{3}{8}$	83/4	311/16	43%	7	15.00	
3		032	0.10	-/0		13.00	17.00
	83/8	91/2	43/16	43/	$7\frac{1}{2}$	18.50	01 00
31/2	9	1017	41.0	-/-		10.00	21.00
372	9	$10\frac{1}{2}$	$4\frac{1}{2}$	$5\frac{1}{4}$	81/2	24.50	28.00
4	10		-14		0/2		40.00
	10	113/8	5	$5^{\rm n}_{18}$	9	31.00	35.00
41/2	111/8		E0/				33.00
- /2		$12\frac{1}{8}$	5%	$6\frac{1}{16}$	$9\frac{1}{4}$	38.00	43.00
5	12	123/4		09.0			
		12/4	6	$6\frac{3}{8}$	10	46.00	51.00
6	$13\frac{7}{8}$	143/8	Q15/				
	10/8	T4 28	615/6	73/16	11	61.00	66.00
7		161/8				02.00	
		1078		81/16	$12\frac{1}{2}$		96.00
8		$19\frac{1}{4}$		037			
				$8\frac{3}{4}$	$13\frac{1}{2}$		130.00
10		$24\frac{1}{4}$					
				101/8	16		190.00
12		$27\frac{1}{2}$		12	10		
		-1/2		14	19		280.00

Lunkenheimer Iron Body Globe and Angle Valves

Bronze Mounted, Outside Screw, Flanged Yoke Bonnet

For 175 Pounds Working Steam Pressure



No. 1126, Globe Screwed



No. 1127, Angle Screwed

Seating surfaces are regrindable; the seat, disc and all other parts are renewable; the stuffing box can be repacked when valves are under pressure and full open.

						-PRICE, E	ACH-
							No. 1129
	From	TO FACE	Charman	TO FACE	Diam.	W- 2200 (1) 1	Globe
Size	INC			HES	Flanges	No. 1126, Globe	No. 1130
In.	Sord.	Flgd.	Sord.	Figd.	In.	No. 1127, Angle Screwed	Angle
		_		L'Igit.	III.		Flanged
2	7%	$9\frac{3}{4}$	3^{18}_{16}	4/8	61/2	\$14.00	\$16.00
21/2	.9	11	41/2	51/6	71/2	18.00	20.50
3	$10\frac{7}{6}$	$12\frac{1}{4}$	517	612	917	23.00	26.00
$3\frac{1}{2}$	113%	13	E7/	01/8	0/4		
		19	5/8	0/2	9	30.00	34.00
4	$12\frac{5}{8}$	135/8	6%16	613/16	10	38.00	42.00
$\frac{4^{1}/2}{5}$	135/8	141/2	613/16	71/4	101/2	46.00	52.00
5	141/6	153/	71/	77%	11	57.00	64.00
6	161/	1717	017	03/			
9	10/4	11/2	0/8	8%	$12\frac{1}{2}$	74.00	81.00
7		191/4		95/8	14		115.00
8		213/		101/2	15		155.00
		/		10/2	40		100.00

Lunkenheimer, Iron Body Globe and Angle Valves

Bronze Mounted, Outside Screw, Flanged Yoke Bonnet

For 250 Pounds Working Steam Pressure



No. 881, Globe Screwed



Screwed

Seating surfaces are regrindable; the seat, disc and all other parts are renewable; the stuffing box can be repacked when valves are under pressure and full open.

						PRICE	EACH-
Size	FACE T	o Facili		TO FACE	Diam.	No. 881, Globe	No. 884, Globe
In.	Serd.	Flgd.	Serd.	Flgd.	Flg. 1	Screwed	No. 885, Angle Flanged
2	83/16	93/4	41/8	47/8	$6\frac{1}{2}$	\$29.00	\$31.00
21/2	10^{5} /8	111/2	$5\frac{3}{8}$	$5\frac{3}{4}$	$7\frac{1}{2}$	33.00	35.00
3 21/	$\frac{1134}{193}$	121/2	5/8	$6\frac{1}{4}$	81/4	37.00	40.00
31/2	$\frac{12\sqrt[3]{4}}{13}$	$\frac{13\frac{1}{2}}{14}$	$\frac{63}{8}$	$\frac{6^{3}4}{7}$	$\frac{9}{10}$	46.00	51.00
41/2		15	072	71/6	101/2	55.00	59.00 67.00
5		153/4		77/8	11		78.00
6	****	$17\frac{1}{2}$		88/4	121/2		100.00
7		$19\frac{1}{4}$		95/8	14		140.00
8		2134		$10\frac{1}{2}$	15		185.00

Lunkenheimer Iron Body Globe and Angle Valves with Interior By-Pass

Bronze Mounted, Outside Screw Flanged Yoke Bonnet

For 250 Pounds Steam Working Pressure





No. 359, Angle

Valves with interior by-pass should be connected so that pressure is taken above the disc.

Seating surfaces are regrindable; the seat, disc and all other parts are renewable; the stuffing box is repackable under pressure when the valves are full open and areas throughout the body are in excess of that of the connecting

Size Inches	Face to Face Inches	Center to Face Inches	Diam. Flanges Inches	Flanged, Pr No. 326 Globe	No. 359 Angle
5	$15\frac{3}{4}$	77/8	11	\$91.00	\$91.00
6	$17\frac{1}{2}$	83/4	$12\frac{1}{2}$	120.00	120.00
7	$19\frac{1}{4}$	95/8	14	170.00	170.00
8	$\frac{2134}{2534}$	$10\frac{1}{2}$	15	215.00	215.00
10	$25\frac{3}{8}$	$12\frac{1}{4}$	171/2	340.00	340.00
12	29	14	$20\frac{1}{2}$	435.00	435.00

Lunkenheimer Steel Monel Mounted Globe and Angle Valves

Outside Screw, Flanged Yoke Bonnet For 300 Pounds Steam Working Pressure







No. 607, Angle

The seating surfaces are regrindable; the seat, disc and all other parts are renewable and the stuffing box is repackable under pressure when the valve is full open.

CII.	Face to	Center	Diameter	FLANGED, PE	RICE, EACH
Size	Face	to Face	Flanges	No. 606	No. 607
Inches	Inches	Inches	Inches	Globe	Angle
2	93/4	47/8	$6\frac{1}{2}$	\$110.00	\$110.00
$2\frac{1}{2}$	$11\frac{1}{2}$	$5\frac{3}{4}$	71/2	130.00	130.00
3	$12\frac{1}{2}$	$6\frac{1}{4}$	81/4	160.00	160.00
31/2	$13\frac{1}{2}$	63/4	9	200.00	200.00
4	14	7	10	230.00	230.00
41/2	15	$7\frac{1}{2}$	$10\frac{1}{2}$	280.00	280.00
5	$15\frac{3}{4}$	77/8	11	300.00	300.00
6	$17\frac{1}{2}$	83/4	$12\frac{1}{2}$	360.00	360.00
7	$19\frac{1}{4}$	95/8	14	470.00	470.00
8	$21\frac{3}{4}$	$10\frac{1}{2}$	15	580.00	580.00

Lunkenheimer Ferrenewo Iron Body Globe and Angle Valves

Union Bonnet

For 150 Pounds Working Steam Pressure







No. 1022, Angle

Seating surfaces are regrindable; the Valve-Nickel seat

and disc and all other parts are renewable.

In the ½-inch and smaller sizes, the disc locknut is omitted, the back of the swivel disc being burnished over the head of the stem; the stuffing box is furnished with a gland follower in sizes 34-inch and larger, and a slotted bonnet ring is furnished on the 2-inch size.

	- Arm				REWED				Scr	WED
			Center		E, EACH		Faceto	Center	PRICE.	EACH
	Size F	ace	to Face	No. 102	1 No. 1022	Size	Face	to Face	No. 1021	
	In. In	ches	Inches	Globe	Angle	In.	Inches	Inches	Globe	Angle
	1/4	$2\frac{9}{16}$	13/16	\$1.10	\$1.10	11/2	51/4	27/16	\$5.50	\$5.70
	3/8	211/16	15/16	1.25	1.25	2	61/4	3	8.75	8.55
	140	3	17/16	1.60	1.60	*21/2	73/8	311/16	17.00	17.00
ı		$3\frac{7}{16}$	15/8	2.20		*3	83/8	43/16	22.00	22.00
-		$4\frac{1}{8}$	115/16	2.80	2.80	*4	10	5	40.00	40.00
	11/4	43/4	$2\frac{1}{4}$	4.00	4.00					
	*01:	0	1/ 0	1	4 * 1					

*Sizes 2½, 3 and 4-inch are of outside screw and yoke construction.

Lunkenheimer Ferrenewo All Iron Globe and Angle Valves

Union Bonnet

For 150 Pounds Working Pressure



No. 1113, Globe



No. 1114, Angle

Made entirely of ferrous materials and designed for use in handling cyanides, creosote, alkaline solutions, etc., such as attack materials of bronze or brass alloys.

The seating surfaces are regrindable and all parts, including the seat ring, are renewable. The stuffing box is repackable under pressure when the valves are full open.

Size Inches	Face to Face Inches	Center to Face Inches	Screwed, I No. 1113 Globe	PRICE, EACH No. 1114 Angle
1/4	29/6	13/6	\$1.60	\$1.60
3/8 1/2	3	1 7/6	1.70 1.90	1.70 1.90
3/4	39/16	15/8	2.10	2.10
11/4	43/4	$2\frac{176}{4}$	2.50 3.30	2.50
2 2	61/4	2 1/16 3	4.40	6.30

Lunkenheimer Iron Body Ferrenewo Full-way Type Globe and Angle Valves

Union Bonnet, Renewable Monel Seat and Disc

For 150 Pounds Steam Working Pressure







No. 1563, Angle

These valves are recommended for such service where at times throttling of the flow is required and at other periods a full-way flow is necessary.

The monel seat and disc are so constructed that they will, to the maximum degree, withstand the severe service to which they are subjected when the valves are used for throttling purposes (partly open).

Size	Face to	Center	Screwed, Pr	
In.	Face Inches	to Face Inches	No. 1525 Globe	No. 1563 Angle
1/4	29/6	13/6	\$5.00	\$5.50
3/8	211/16	1 5 16	5.25	5.75
3/4	$\frac{3}{3}$ %	15/16	5.50	6.00
1	. 41/8	1 15%	6.00 7.75	6.60 8.50
11/4	43/4	21_{4}^{10}	10.50	11.75
11/2	51/4	27/16	14.00	15.50
2	. 6 1/4	. 3	19.00	21.00

Lunkenheimer Iron Body Ferrenewo Throttling Type Globe and Angle Valves Union Bonnet, Renewable Monel Seat and Disc



No. 1536. Globe



No. 1564, Angle

The Throttling Type Ferrenewo Valves have a reduced seat opening which is approximately that of the inside diameter of one size smaller pipe than that of the valve size.

They are intended for such service where a restricted flow is at all times required. Particularly are they adapted for installation where the flow contains grit or consists of hot water or heavily saturated steam, and where the reduced seat openings sufficiently throttle the flow permitting the disc to be raised to its limit, thereby eliminating the severe wear caused by wire drawing between the seating surfaces when the valves are but slightly open.

	0	- Prozes		
Size In.	Face to Face Inches	Center to Face Inches	Screwed, P No. 1536 Globe	No. 1564 Angle
1/4 3/8	$\frac{2^{9}}{2^{11}}$	1 3/6 1 5/6	\$7.00 7.25	\$7.75 8.00
1/2 3/4	3%	17/6 15/8	7.50 8.00	8.25 8.80
11/4	$\frac{4\frac{1}{8}}{4\frac{3}{4}}$	1^{15}_{16} 2^{1}_{4}	9.75 13.00	10.75 14.50
2	$6\frac{1}{4}$	27/16 3	16.50 21.50	18.00 24.00

Lunkenheimer Steel Monel Mounted Globe and Angle Valves

Screw Ends, Union Bonnet For 400 Pounds Steam Working Pressure





Made with steel body, monel bonnet and union bonnet ring, rolled monel stem, forged monel seat and disc.

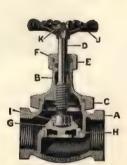
Seating surfaces are regrindable and all parts are renewable, including seat and disc. Pressure may be taken either above or below the disc. Valves can be repacked under pressure when wide open.

Face to Center PRICE, E	ACH-
7 .1	No.
Size Globe Angle Clabe	1452
Inches Valves Valves Valves	Angle
* 1/	Valves
* 3/	\$32.00
17 512 200	32.00
72 314 1916 40.00	44.00
³ / ₄ 3 ³ / ₄ 1 ⁷ / ₈ 45.00	50.00
1, 41/2 27/32 55.00	60.00
11/4 51/8 29/16 70.00	
	82.00
	100.00
- 5/16 5/16 130.00	145.00
*Sizes 1/4 and 3/8-inch are made of all monel.	

Lunkenheimer SA Anti-acid Globe Valves

Union Bonnet

For 50 Pounds Working Pressure



No. 1398, Screwed



No. 1399, Flanged

Particularly for use in sludge acid lines. Also adapted for handling slightly acidulous alum solution, fatty acids, salt solutions, gasoline and mineral oils bearing corrosive sulphur.

Size	INC	TO FACE	Diam. Flanges	No. 1398	EACH No. 1399
In.	Screwed	Flanged	In.	Screwed	Flanged
3/2	25/8		• •	\$22.00	* * * * * *
- 9/4	3/4		**	24.00	
1	3%			28.00	
11/4	41/4			38.00	
1 1/2	4%	61/8	5	45.00	\$75.00
2	$5\frac{3}{4}$	71/4	6	65.00	95.00
$\frac{2^{1/2}}{3}$		8	7	*****	125.00
3	* * *	9	71/2		150.00

Iron Body Check Valves

Horizontal and Vertical

For 125 Pounds Steam Working Pressure

Brass Trimmings







Vertical, Flanged

Horizontal valves, sizes 3-inch and smaller are furnished with a brass cap which is screwed into the body. Sizes 3½-inch and larger are furnished with an iron cap bolted to the body. Vertical valves are furnished with bolted cap.

Size	FACE T	O FACE	Diam. Flanges	Horn	PRICE,	EACH-VERS	FICAL
In.	Screwed	Flanged	In.	Screwed	Flanged	Screwed	Flanged
2	61/2	8	6	\$3.60			
$2\frac{1}{2}$	7	$8\frac{1}{2}$	7	6.50		\$9.50	
3	8	$9\frac{1}{2}$	$7\frac{1}{2}$	8.90	\$11.50	12.50	
31/2	9	$10\frac{1}{2}$	81/2	12.25		17.00	
4	10	$11\frac{1}{2}$	9	14.25	18.00	21.00	
41/2	$10\frac{1}{2}$	12	91/4	19.00		30.00	
5	$11\frac{1}{4}$	13	10	22.00	26.00	33.00	
6	13	14	11	30.00	35.00	40.00	\$45.00
7		16	$12\frac{1}{2}$		50.00		67.00
8		$19\frac{1}{2}$	$13\frac{1}{3}$		62.00		78.00
10		$24\frac{1}{2}$	16		115.00		135.00
12		$27\frac{1}{2}$	19		175.00		
14		28	21		300.00		

Iron Body Swing Check Valves With Brass or Leather Disc, Brass Seat

For Steam Working Pressures; 16-inch and Smaller, 125 Pounds; Above 16-inch, 100 Pounds



For use with cold water, pref-erably should erably should have leather faced discs; for hot water or steam, brass or brass faced discs should be used. Unless other-



Flanged

wise specified,
valves will be furnished with solid brass or brass taced discs. Sizes 3 inches and smaller have solid brass discs; larger sizes, iron discs with brass faces.

May be used in horizontal position or for upward flow.

	FACE	TO FACE	Diam.		PRICE,	EACH-	
Size		CHES	Flanges	WITH B	RASS DISC	WITH LEA	THER DISC
In.	Screwed	Flanged	In.	Screwed	Flanged		Flanged
2	61/2	8	6	\$11.00	\$13.00	\$12.00	\$14.00
$2\frac{1}{2}$	7	81/2	7	12.00	14.50	13.50	16.00
3	8	$9^{1/2}$	$7\frac{1}{2}$	13.50	17.00	15.50	19.00
31/2	9	$10^{1/2}$	$8\frac{1}{2}$	17.50	21.00	20.00	23.50
4	10	$11\frac{1}{2}$	9	20.00	24.00	23.00	27.00
41/2	101/4	12	91/4	26.00	30.00	29.50	33.50
5	111/4	13	10	30.00	34.00	34.00	38.00
6	$12\frac{1}{2}$	14	11	36.00	41.00	40.00	45.00
7	14	16	$12\frac{1}{2}$	55.00	60.00	61.00	66.00
8	16	$19\frac{1}{2}$	$13\frac{1}{2}$	70.00	75.00	77.50	82.50
10	$18\frac{3}{4}$	$24\frac{1}{2}$	16	110.00	115.00	120.00	125.00
12	$21\frac{1}{4}$	$27\frac{1}{2}$	19	160.00	168.00	172.00	180.00
14		28	21		340.00		
16		32	$23\frac{1}{2}$		450.00		
18		36	25		600.00		
20		40	$27\frac{1}{2}$		700.00		
24		48	32		1000.00		
36		60	$38\frac{3}{4}$		1650.00		

Lunkenheimer Iron Body Check Valves

Horizontal and Angle Bronze Mounted, Flanged Cap

For 125 Pounds Steam Working Pressure-175 Pounds Water Working Pressure





No. 1136, Horizontal
Screwed
Seating surfaces are regrindable; all parts, including the bronze seat ring, are renewable; areas throughout the body are in excess of that of the connecting pipe; the disc is well guided and perfect seating is connected. guided and perfect seating is assured.

0	To Lo		I RICE, EACH				
						No. 1136	No. 1138
	E. cm	o FACE	C	77	T)*	Hor.	Hor.
CI2			CENTER		Diam.	No. 1137	No. 1139
Size		THES		HES	Flanges	Angle	Angle
In.	Serd.	Flgd.	Serd.	Flgd.	In.	Screwed	Flanged
2	$6\frac{3}{8}$	73/4	33/6	37/8	6	\$9.00	\$10.50
21/2	$7\frac{3}{8}$	83/4	311/16	43/8	7	12.00	14.00
3	83/8	$9\frac{1}{2}$	43/8	43/4	$7\frac{1}{2}$	14.50	17.00
31/2	9	101/2	$4\frac{1}{2}$	$5\frac{1}{4}$	$8\frac{1}{2}$	20.50	24.00
4	10	113/8	5	511/18	9	26.00	30.00
41/2	$11\frac{1}{8}$	$12\frac{1}{8}$	$5\frac{9}{16}$	61/6	91/4	33.00	38.00
5	12	$12\frac{3}{4}$	6	$6\frac{3}{8}$	10	39.00	44.00
6	$13\frac{7}{8}$	$14\frac{3}{8}$	615/6	786	11	54.00	59.00
7		$16\frac{1}{8}$		81/6	$12\frac{1}{2}$		89.00
8		$19\frac{1}{4}$		$8\frac{3}{4}$	$13\frac{1}{2}$		120.00

Lunkenheimer Iron Body Check Valves

Horizontal and Angle Bronze Mounted, Flanged Cap

For 250 Pounds Steam Working Pressure-400 Pounds Water Working Pressure



No. 900, Horizontal Screwed



No. 901, Angle Screwed

Seating surfaces are regrindable; all parts, including the bronze seat ring, are renewable; areas throughout the body are in excess of that of the connecting pipe; the disc is well guided and perfect seating is assured.

guided and perfect seating is assured.						PRICE, EACH	
						No. 900	No. 902
						Hor.	Hor.
	FACE	TO FACE	CENTER	TO FACE	Diam.	No. 901	No. 903
Size		CHES		CHES	Flanges	Angle	Angle
In.	Serd.	Flgd.	Serd.	Flgd.	In.	Screwed	Flanged
2	83/6	93/4	41/8	47/8	$6\frac{1}{2}$	\$23.00	\$25.00
$2\frac{1}{2}$	$10^{5}/_{8}$	$11\frac{1}{2}$	53/8	53/4	$7\frac{1}{2}$	26.50	28.00
3	113/4	$12\frac{1}{2}$	$5\frac{7}{8}$	$6\frac{1}{4}$	81/4	29.50	32.00
$3\frac{1}{2}$	$12\frac{3}{4}$	$13\frac{1}{2}$	$6\frac{3}{8}$	$6\frac{3}{4}$	9	34.00	36.00
4	13	14	$6\frac{1}{2}$	7	10	42.00	45.00
41/2		15		$7\frac{1}{2}$	$10\frac{1}{2}$		50.00
5		$15\frac{3}{4}$		$7\frac{7}{8}$	11		60.00
6		$17\frac{1}{2}$		$8\frac{3}{4}$	$12\frac{1}{2}$		75.00
7	* * * *	$19\frac{1}{4}$		95/8	14		100.00
8		$21\frac{3}{4}$		$10\frac{1}{2}$	15		130.00

No. 1116 Lunkenheimer All-Iron Horizontal Check Valves

LANSTENNER IN THE PARTY OF THE

Ferrenewo Screwed Cap

For 150 Pounds Working Pressure

For use in handling cyanides, creosote, alkaline solutions and other fluids which attack bronze but not iron. Valves with Ferrenewo screwed cap furnished in sizes ½ to 2 inches; No. 1116, horizontal, screwed.

Size Inches 1/4 3/8 .	Face to Face Screw End Valves Inches 29/16 211/16	Price Each \$1.50 1.60 1.75	1 11/4 11/2	Face to Face Screw End Valves Inches 4 ¹ / ₈ 4 ³ / ₄ 5 ¹ / ₄	Price Each \$2.25 3.00 4.00
3/4	39/16	1.90	2 2	$\frac{5\frac{1}{4}}{6\frac{1}{4}}$	4.00 5.75

No. 1471 Lunkenheimer Steel Lift Check Valves

Horizontal, Screwed Cap For 400 Pounds Steam Working Pressure 750° F. Total Temperature



Size 1/4 to 2 inches.

Screwed ends. Bodies are of steel; caps and guides of cast monel, and seats and discs of rolled monel. The ¼ and %-inch are furnished in all monel.

The seating surfaces are regrinding and all parts, including seat and disc are renewable.

Prices upon application.

Lunkenheimer Steel Swing Check Valves Flanged Cap

For 300 Pounds Steam Working Pressure
No. 1314, Bronze Mounted, 500° F. Total Temperature
No. 1397, Monel Mounted, 750° F. Total Temperature

Bodies and caps are of steel.

Flange ends.

The trimmings of No. 1314 are of bronze and No. 1397 of monel.

All parts including seat and disc are renewable. Flanges have 1/6-inch raised face. They are regularly furnished spotfaced and drilled in accordance with the proposed American 250-pound working steam pressure steel-flange standard.

Size Inches	Face to Face Flange End Valves over Raised Faces Inches	Diam- eter Flanges Inches	No. 1314 Steel Bronze Mounted	No. 1397 Steel Monel Mounted
$1\frac{1}{2}$	91/8	6	\$100.00	*
2	$10\frac{1}{2}$	$6\frac{1}{2}$	115.00	
$2^{1/2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	140.00	*
3	$\frac{12\frac{1}{2}}{2}$	81/4	160.00	*
$3\frac{1}{2}$	$13\frac{1}{4}$	9	200.00	
41/	14	10	220.00	*
4 ¹ / ₂ 5	15	$10\frac{1}{2}$	260.00	sk
	$15\frac{3}{4}$	11	270.00	*
6	$17\frac{1}{2}$	$12\frac{1}{2}$	310.00	*
7	$19\frac{1}{4}$	14	410.00	*
8	21	15	440.00	1 16
10	26	$17\frac{1}{2}$.	. *	*

†Standard practice of manufacturers urges the discontinuance of these numbers.

*Prices upon application.

Lunkenheimer Iron Body Swing Check Valves

Bronze Mounted, Flanged Cap For 125 Pounds Steam Working Pressure For 175 Pounds Water Working Pressure



No. 228, Screwed



No. 933, Flanged

Seating surfaces are regrindable and all parts, including the bronze seat ring, are renewable.

Two side plugs are provided which act as bearings for the disc carrier pin and these also being renewable, the perfect seating of the disc can at all times be maintained.

The valves may be connected in either a horizontal or vertical position. Having a practically straightway flow channel, and the area throughout the body being in excess of that of the connecting pipe, an unobstructed flow is assured.

Size	FACE TO INCH	ES	Diameter Flanges	No. 228	EACH-No. 933
Inches	Screwed	Flanged	Inches	Screwed	Flanged
$\frac{2}{2^{1/2}}$	5½6	8	6	\$8.30	\$9.70
3 4	77/	1017	-1.	10.50	12.00
31/2	77/8	101/8	71/2	12.00	15.00
4	9 9 156	10^{15} 16	81/2	16.00	20.00
41/2	1011/6	1134	9	20.00	25.00
5	/ 103	$12\frac{3}{4}$	$9\frac{1}{4}$	24.50	30.00
6	$\frac{11\frac{1}{2}}{12\frac{1}{16}}$	137/16	10	27.50	36.00
8	14716	145/8	11	33.00	48.00
10	* * * *	11/8	$13\frac{1}{2}$		80.00
10	* * * *	$24\frac{1}{2}$	16		120.00

No. 1514 Lunkenheimer All Monel Mounted Swing Check Valves

Screw Ends-Screw Cap



For 400 Pounds Steam Working Pressure

All Monel Mounted Swing Check Valves are regularly furnished with cast monel body, cap, and disc carrier; rolled monel disc, disc carrier pin, side plugs, and disc locknut.

Size Inches 1/4 3/8 1/2	Face to Face Inches Screwed 2 ⁵ / ₈ 2 ⁵ / ₈	Price Each \$24.00 24.00 28.00	Size Inches 3/4 1	Face to Face Inches Screwed 334 41/2 51/2	Price Each \$33.00 40.00 50.00
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No. 1598 Lunkenheimer Steel Monel Mounted Swing Check Valves

Screw Ends-Bolted Cap

For 400 Pounds Steam Working Pressure

Steel Monel Mounted Swing Check Valves have cast steel body, cap and disc carrier; forged monel disc and seat ring; rod monel disc carrier pin, side plugs, and disc locknut.



Size Inches 11/2	Face to Face, In. Screwed	Price Each \$150.00	Size Inches 2	Face to Face, In. Screwed	Price Each
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Lunkenheimer Iron Body Swing Check Valves

Bronze Mounted, Flanged Cap

For 250 Pounds Steam Working Pressure—400 Pounds
Water Working Pressure





No. 324, Screwed

No. 323, Flanged

Seating surfaces are regrindable and all parts, including the bronze seat ring, are renewable.

Two side plugs are provided which act as bearings for the disc carrier pin and these also being renewable, the perfect seating of the disc can at all times be maintained.

Size Inches	FACE TO INC.		Diameter Flanges Inches	No. 324 Screwed	No. 323 Flanged
2	7	101/6	61/2	\$26.00 30.00	\$28.00 32.00
21/2	87/8	1276	81/4	33.00	36.00
31/2	10^{5}_{8}	$13\frac{3}{8}$ $14\frac{3}{4}$	9	39.00 42.00	41.00 45.00
5		$15\frac{9}{16}$ $16\frac{3}{8}$	$\frac{10\frac{1}{2}}{11}$		52.00 60.00
6		18 20	$\frac{12\frac{1}{2}}{14}$		72.00 95.00
8	****	$21\frac{3}{4}$	15		115.00

Lunkenheimer Ferrenewo Iron Body Check Valves

Horizontal and Angle

Screwed Cap

For 150 Pounds Steam Working Pressure





No. 898, Horizontal

No. 899, Angle

The body is of iron, the seat and disc are of a special nickel alloy highly resistive to wear and corrosion, and the disc guide and cap are of bronze.

Seating surfaces are regrindable; the valve nickel seat and disc together with all other parts are renewable; areas throughout the body are in excess of that of the connecting pipe; the disc is well guided insuring perfect seating.

disc is well guided, insuring perfect seating.

Sizes ¼ to 1½ inches inclusive have hexagonal caps. The
2-inch size is furnished with a round slotted cap.

	T3 .	a .	~ -	_
Size	Face to	Center	SCREWED, PR	
Inches	Inches	to Face Inches	No. 898 Horizontal	No. 899
THERES	Anches	THURES		Angle
1/4	2%	1 3/6	\$1.10	\$1.10
3/8	211/6	15/18	1.20	1.20
1/2	3	17/6	1.30	1.30
3/4	3%	15%	1.90	1.90
1	41/8	1 15/4	2.60	2.60
11/4	43/	21/4	3.80	3.80
11/2	51/4	2 7/6	5.00	5.00
2	$61\sqrt{4}$	3 "	8.30	8.30

H-P-M Hydraulic Check Valves





No. 1026 Male Ends

No. 1027, Male and Female Ends



No. 1028, Female Ends, Screwed



No. 1485, Female Ends, Flanged

No. 1026 illustrates a check valve made in the smaller sizes only with male pipe connections on both ends.

No. 1027 illustrates a valve with a male pipe connection on the inlet end and a female connection on the outlet end. The valve is furnished in the 1-inch size only.

No. 1028 shows the same type of valve but having female pipe connections on both ends. This is the regular type of check valve having screwed pipe connections and is made in all standard sizes.

No. 1485 shows the same type of check valve but having flanged connections. This valve is made in all sizes 2 inches and larger. Companion flanges for both ends are furnished as a part of all regular valves in this construction.

	ScrewedFlanged								
	Kind		Max.	-		Max.	•		
Size Inches	of Body	Serial No.	Pres. Pounds	No.	Serial	Pres.	3.7		
	_				No.	Pounds	No.		
1/2	Bronze	4289	5000	1026					
1/2	Bronze	8033	5000	1028					
3/4	Bronze	227	5000	1026					
1/2 3/4 3/4	Bronze	6397	5000	1028					
1	Bronze	544	5000	1027					
1	Bronze	5592	5000	1028					
11/4	Bronze	4590	5000	1028					
11/2	Bronze	6709	5000	1028					
2	Steel	5260	5000	1028	7713	4000	1485		
$2\frac{1}{2}$	Steel	5593	4500	1028	7442	4000	1485		
3	Steel	5594	4500	1028	7443	4000	1485		
$3\frac{1}{2}$	Steel	4382	4500	1028	7444	4000	1485		
4	Steel	5595	4500	1028	7445	4000	1485		
5	Steel		1000	2020	8724	3000	1485		
6	Steel				7711	2500	1485		
3/4	Bronze	5928	10000	1028	****	2000	1.100		
1	Bronze	1358	10000	1028		* * * *	* * * *		
11/4	Steel	7446	10000	1028					
	and and								
$1\frac{1}{2}$	Steel	7447	10000	1028					

Prices upon application.

Iron Body Gate Valves

Brass Trimmings, Wedge Gate, Non-Rising Stem

For Steam Working Pressures: 16 Inch and Smaller, 125 Pounds; 18 Inch and Larger, 100 Pounds







Flanged

Size Inches	FACE T INC Screwed	HES	Diam. Flanges	PRICE,	Елсн
		Flanged	Inches	Screwed	Flanged
2	57/16	7	6	\$10.00	\$12.00
21/2	57/8	$7\frac{1}{2}$	7	11.50	13.50
3	$6\frac{1}{8}$	8	71/2	14.00	16.50
$3\frac{1}{2}$	$6\frac{1}{2}$	81/2	81/2	17.00	19.50
4	67/8	9	9	19.00	23.00
41/2	71/8	91/2	91/4	24.00	
5	73%	10	10	27.50	20.00
6	73/	101/2	11		31.50
7	817	11		32.50	36.50
8	Q3 Z		$12\frac{1}{2}$	45.00	49.00
9	91/4	111/2	$13\frac{1}{2}$	54.00	58.00
10	~/·/·/	12	15	76.00	81.00
	9/8	13	16	90.00	95.00
12	$11\frac{5}{8}$	14	19	125.00	133.00
14	* * * *	15	21		181.00
15		15	$22\frac{1}{4}$		220.00
16	* * * *	16	231/2		260.00
18		17	25		350,00
20		18	271/2	*****	425.00
22		19	291/2	* * * * * *	
24		20	32	* * * * * *	530.00
26		23	341/4	* * * * * *	600.00
28	* * * *	26	/ · · · ·		800.00
30			361/2	* * * * * *	950.00
50	4 8 9 4	30	383/4	*****	1100.00
			_		

Iron Body Gate Valves

Brass Trimmings, Wedge Gate, Non-Rising Stem
Open to the Left

For Water Working Pressures: 12 Inch and Smaller, 175 Pounds 14 and 16 Inch, 150 Pounds; 18 Inch and Larger, 120 Pounds Tested to 300 Pounds Hydraulic Pressure

Can be furnished open to the right, when so ordered, at same price. Hubs are furnished rough; bored hubs furnished at special price.



Hub Ends

		END T			Paic	E, EACH
		INCE	IES	I. D.	Hu	B ENDS
	ize	Without		Hub	Without	With
	In.	By-Pass	By-Pas	s In.	By-Pass	By-Pass
	2	$8\frac{1}{2}$		31/4	\$10.00	
	3	9		43/4	14.00	
	4	$10\frac{1}{4}$		55/8	19.00	
	5	101/4		63/4	27.50	
	6	$10\frac{3}{4}$		77/8	32.50	
	7	$10\frac{3}{4}$		9	45.00	
	8	12		10	54.00	
1	0	123/4		$12\frac{1}{4}$	90.00	
1	2	$13\frac{1}{2}$		$14\frac{3}{8}$	125.00	
1	4	$13\frac{3}{4}$		$16\frac{1}{2}$	173.00	
		, -		/4		
1	6	16	19	$18\frac{3}{4}$	250.00	\$315.00
1	8	17	20	201/8	340.00	415.00
2	0	17	21	23	415.00	500.00
2	4	18	22	271/4	590.00	690.00
3	0	30	30	34	1075.00	1225.00
					20.0.00	1223.00

Iron Body Gate Valves

Flanced

Outside Screw and Yoke
Brass Trimmings, Wedge Gate

For Steam Working Pressures: 16-Inch and Smaller, 125 Pounds 18-Inch and Larger, 100 Pounds

The position of the stem indicates whether the valve is open, partly open or closed.

	FACE	TO FACE	Diam.		PRIC	E ELON	
Size		TCHES	Flanges	WITH S	TEEL STEM		RASS STEM
In.	Screwed	i Flanged	In.	Screwed	Flanged	Screwed	Flanged
2	$5\frac{7}{16}$	7	6	\$17.50	\$19.50	\$19.00	\$21.00
21/2	57/8	71/2	'7	19.00	21.00	20.50	22.50
3 ~	$6\frac{1}{8}$	8	$7\frac{1}{2}$	22.00	24.50	23.50	26.00
31/2	$6\frac{1}{2}$	81/2	$8\frac{1}{2}$	25.00	27.50	27.00	29.50
4	67/8	9	9 2	30.00	34.00		
41/2	71/8	$9\frac{1}{2}$	91/4	37.00		32.50	36.50
5	73/				41.00	40.00	44.00
6	73/8	10	10	42.00	46.00	45.00	49.00
	73/4	$10\frac{1}{2}$	11	48.00	52.00	52.00	56.00
7	81/4	11	$12\frac{1}{2}$	64.00	68.00	69.00	73.00
8	83/4	$11\frac{1}{2}$	$13\frac{1}{2}$	80.00	84.00	86.00	90.00
9	$9\frac{1}{4}$	12	15	105.00	110.00	113.00	118.00
10	97/8	13	16	122.00	127.00	131.00	136.00
12	$11\frac{5}{8}$	14	19	160.00	168.00	172.00	180.00
14		15	21		236.00		255.00
15		15	$22\frac{1}{4}$		285.00		310.00
16		16	$23\frac{1}{2}$		325.00		350.00
18		17	25		435.00		470.00
20		18	271/2		525.00		565.00
22		19	291/2		650.00		700.00
24		20	32		725.00		775.00
26		23	341/4	* * * * * *	950.00		
28		26	$36\frac{1}{2}$		1125.00		1025.00
30		30					1210.00
30		90	$38\frac{3}{4}$		1300.00	*****	1400.00

Iron Body Gate Valves

Outside Screw and Yoke, Wedge Gate
For 250 Pounds Steam Working Pressure

		FACE T	o Face	Diam.		RICE, EAC STEEL WI		
	Size	INC	HES	Flanges	S	TEM-	STEM	
	In.	Serd.	Flgd.		Screwed	Flanged	Flanged	
	11/4	51/6	61/2	5		\$34.50		
	11/2		71/2	6		35.50		
	2	7	* 7. 88		63E E0		041.00	9
			81/2	$6\frac{1}{2}$	\$35.50			
	21/2	8	$9\frac{1}{2}$	$7\frac{1}{2}$	41.00	43.50	47.00	
	3	9	111/8	81/4	54.00	57.00	61.00	
	$3\frac{1}{2}$	10	117/8	9		70.00		
	4	11	12	10	72.00	77.00		
	41/2	121/4	131/4	101/2		97.00		
	5	131/2	15	11	100.00	105.00		
	6				100.00			- 40
		$15\frac{7}{8}$	$15\frac{7}{8}$	$12\frac{1}{2}$		122.00		Milk Red
	7	$16\frac{1}{4}$	$16\frac{1}{4}$	14		147.00	158.00	Contraction of the last of the
	8	$16\frac{1}{2}$	$16\frac{1}{2}$	15		187.00	201.00	
	9	17	17	$16\frac{1}{4}$		257.00	276.00	I was
	10	18	18	171/2		283.00	305.00	1 300
	12		193/4	201/2		390.00	420.00	
	14		221/2	23		510.00		
	15							
		* * * *	$22\frac{1}{2}$	$24\frac{1}{2}$		610.00		do Name.
	16	* * * *	24	$25\frac{1}{2}$		750.00		Flang
	18		26	28				
1	20		28	301/2				
4	24		31	36				

With By-Pass, Steel Stem Only

	441611	Ly-1 a33,	Steel Stem	Only	
Size	Flanged	Size	Flanged	Size	Flanged
Inches		Inches	Price, Each	Inches	Price, Each
5	\$153.00	10	\$335.00	18	\$1050.00
6	170.00	12	455.00	20	1250.00
7	195.00	14	580.00	24	1700.00
8	240.00	15	680.00		
9	310.00	16	825.00	4 9	* * * * * * * *
	4		020.00		

Lunkenheimer Iron Body Gate Valves Bronze Mounted, Wedge Disc, Stationary Stem Inside Screw, Flanged Bonnet

For 125 Pounds Steam Working Pressure-175 Pounds



No. 1427, Screwed

No. 1428, Flanged

Stuffing box is repackable when valve is under pressure and full open. All parts renewable, including seat rings.

Size In.		FACE TO FACE INCHES Screwed Flanged		No. 1427 No. 1428 Screwed Flanged		
2	51/4	7	6	\$19.00	\$22.00	
2½ 3	534	$\frac{7\frac{1}{2}}{8}$	7	22.00	25.00	
31/2	65/8	81/2	81/2	26.00 34.00	30.00 38.00	
4	71/6	9	9	38.00	42.00	
4 ¹ / ₂ 5	73/8	$\frac{9\frac{1}{2}}{10}$	10	51.00 55.00	54.00 58.00	
6	83/4	101/2	11	65.00	68.00	
7		11	$12\frac{1}{2}$		95.00	
8		$\frac{11\frac{1}{2}}{13}$	$\frac{13\frac{1}{2}}{16}$		105.00 175.00	
12	* * *	14	19		275.00	

Lunkenheimer Iron Body Gate Valves

Bronze Mounted, Wedge Disc, Rising Stem Outside Screw, Flanged Bonnet and Yoke For 125 Pounds Steam Working Pressure—175 Pounds



No. 1429, Screwed



No. 1430, Flanged

All parts renewable, including seat rings. Stuffing box repackable when valve is under pressure and full open.

I	ACE TO	FACE	Diam.	Pro	CE, EACH		Face to	Diam.	No. 1430 Figd.
Size	INC	CHES	Flgs.		No. 1430	Size	Flgd.	Flgs.	Price
In.	Serd.	Flgd.	In.	Sord.	Figd.	In.	In.	In.	Each
2	51/4	7	6	\$33.00	\$36.00	8	111/2	$13\frac{1}{2}$	\$160.00
21/2	$5\frac{3}{4}$	$7\frac{1}{2}$	7	37.00	40.00	10	13	16	240.00
3	$6\frac{5}{16}$	8	71/2	41.00	45.00	12	14	19	330.00
$3\frac{1}{2}$	$6\frac{5}{8}$	81/2	81/2	53.00	57.00	14	15	21	450.00
4	71/6	9	9	60.00	64.00	16	16	231/2	625.00
41/2	73/8	$9\frac{1}{2}$	91/4	79.00	82.00	18	17	25	850.00
5	8	10	10	84.00	87.00	20	18	271/2	1050.00
6	83/4		11	95.00	98.00	24	20	32	1500.00
7		11	$12\frac{1}{2}$		140.00		4.4		

Lunkenheimer Iron Body Gate Valves Bronze Mounted Stationary Stem, Inside Screw, Flanged Bonnet For 175 Pounds Steam Working Pressure



No. 602, Screwed



No. 603, Flanged

The disc in these valves is perfectly guided by ribs cast within the body which eliminates dragging of the disc upon the seats when the valve is being opened or closed.

All parts renewable including seat rings. Stuffing box is repackable when valves are under pressure and full open. These valves being of the wedge disc double seated pat-

tern, will take pressure from either end. *Face to , will take pressure Price, Each Face to Face Diam, Price, Each Inches Figs. No. 602 No. 603 Size Inches Figd. In. Flanged Face Flgd. In. Price Each Serd. 41/2 6½ \$14.00 \$16.00 7½ 17.50 19.50 65/8 121/8 \$82.00 21/2 53/16 131/8 93.00 22.50 27.00 3 5 1/18 25.50 10 15% 135.00 161/2 9 30.00 12 185.00 10 33.00 36.00 14 18 23 210.00 183/8 $10\frac{1}{2}$ 38.00 41.00 15 250.00 $10\frac{1}{4}$ 45.00 48.00 16 201/8 251/2 11 275.00 101/8 $12\frac{1}{2}$ 53.00 60.00 *Dimensions of flanged valves over raised faces.

Lunkenheimer Iron Body Gate Valves Bronze Mounted

Rising Stem, Outside Screw, Flanged Bonnet and Yoke
For 175 Pounds Steam Working Pressure—250 Pounds
Water Working Pressure



No. 642, Screwed



No. 643, Flanged

All parts renewable, including seat rings. Stuffing box is repackable when valves are under pressure and full open. Wedge disc double seated pattern. Pressure from either end.

		_					*Face to		No. 643	
	FACE T	TO FACE	Diam.	PRICE	EACH .		Face	Diam.	Flanged	
Size	INCE	TES :	Flgs.	No. 642	No. 643	Size	Flgd.	Flgs.	Price	
In.	Serd.	*Flgd.	In.	Serd.	Flgd.	In.	In.	In.	Each	
2	41/2	65/8	$6\frac{1}{2}$	\$17.00	\$19.00	7	121/8	14	\$92.00	
21/2	53/6	75/8	71/2	20.50	22.50	8	131/8	15	110.00	
3	5 7/8		81/4	23.50	26.00	10	$15\frac{5}{8}$	171/2	155.00	
$3\frac{1}{2}$	511/16	85/8	9	32.50	35.50	12	$16\frac{1}{2}$	201/2	200.00	
4	6	9	10	39.00	42.00	14	18	23	220.00	
$4\frac{1}{2}$	63/6	95/8	101/2	46.50	49.50	15	183/8	241/2	250.00	
5		$10\frac{1}{4}$	11	52.00	55.00	16	$20\frac{1}{8}$	251/2	300.00	
6	77/8	10 1/8	121/2	61.00	68.00					
*Dimensions of flanged valves over raised faces.										
				D 1 067	000 0102			W 1		

Lunkenheimer Iron Body Gate Valves Bronze Mounted, Wedge Disc, Stationary Stem Inside Screw, Flanged Bonnet For 250 Pounds Steam Working Pressure For 400 Pounds Water Working Pressure







No.1434, Flanged

All parts renewable, including seat rings. Stuffing box repackable when valve is under pressure and full open.

Disc accurately guided on machined guides. It does not

Disc accurately guided on machined guides. It does not drag over seat—no scoring or marring of seating surfaces.

Bronze to bronze contacts in yoke, gland and bottom of stuffing box prevent corrosion. No scoring of stem.

Size	FACE TO INC.		Diam. Flgs.	PRICE No. 1433	, EACH No. 1434	Size	Diam.	Face	No. 1434 Flgd.
In.	Serd.	Flgd.	In,	Serd.	Flgd.	In.	Flgs. In.	Flgd. In.	Price Each
$1\frac{1}{2}$	$5\frac{1}{2}$	$7\frac{1}{2}$	6	\$44.00	\$48.00	5	15		\$160.00
2	6	81/2	$6\frac{1}{2}$	46.00	50.00	6	157/8	121/2	180.00
$2^{1/2}$	65/8	$9\frac{1}{2}$	$7\frac{1}{2}$	56.00	60.00	7	161/4	14	250.00
3	$7\frac{1}{4}$	111/8	81/4	70.00	75.00	8	161/2	15	280.00
$3\frac{1}{2}$	715/16	$11\frac{7}{8}$	9	95.00	100.00	10	18	171/2	430.00
4	89_{16}	12	10	105.00	110.00	12	193/4	$20\frac{1}{2}$	600.00
$4\frac{1}{2}$		$13\frac{1}{4}$	$10\frac{1}{2}$		150.00		/4	-0/2	000.00

Lunkenheimer Iron Body Gate Valves Bronze Mounted, Wedge Disc, Rising Stem Outside Screw, Flanged Bonnet and Yoke For 250 Pounds Steam Working Pressure For 400 Pounds Water Working Pressure



No. 1435, Screwed



No. 1436, Flanged

All parts renewable; stuffing box repackable when valve is under pressure and full open. Disc accurately guided on machined guides.

Size In.	Serd.	o Face HES Flgd.	Diam. Flgs. In.	PRICE No. 1435 Serd.	E, EACH No. 1436 Flgd.	Size In.	Face to Face Flgd. In.	Diam. Flgs. In.	Price Each No. 1436 Flanged
$1\frac{1}{2}$	$5\frac{1}{2}$	$7\frac{1}{2}$	6	\$64.00	\$68.00	6	157/8	121/2	\$220.00
2	6	81/2	$6\frac{1}{2}$	66.00	70.00	7	1614	14	300.00
21/2	65/8	91/2	71/2	76.00	80.00	8	161/2	15	340.00
3	$7\frac{1}{4}$	111/8	81/4	95.00	100.00	10	18	171/2	500.00
31/2	715/6	117/8	9	125.00	130.00	12	193/4	201/2	
4	89/16	12	10	135.00	140.00	14	$\frac{1374}{221/2}$	23	1000.00
$4^{1/2}$	10	131/4	101/2		180.00	16	24		
5		15	11		190.00	18	26	$\frac{251/2}{28}$	1400.00
					150.00	10	20	40	1900.00

No. 1438 Lunkenheimer Iron Body Gate Valves with By-pass

Bronze Mounted, Wedge Disc, Rising Stem Outside Screw, Flanged Bonnet and Yoke

For 250 Pounds Steam Working Pressure



All parts are renewable, including seat rings.

The stuffing box is repackable when the valve is under pressure and full open.

The disc is accurately guided on machined guides. The disc does not drag over the seat so there is no scoring or marring of the seating surfaces.

Bronze to bronze contacts in the yoke, gland and bottom of the stuffing box prevent corrosion. There is no scoring of the stem.

Size Inches	Face to Face Flanged Inches	Diameter Flanges Inches	No. 1438 Flanged Price Each
6	$15\frac{7}{8}$	$12\frac{1}{2}$	\$390.00
7	$16\frac{1}{4}$	14	475.00
8	$16\frac{1}{2}$	15	550.00
10	18	$17\frac{1}{2}$	720.00
12	$19\frac{3}{4}$	$201\tilde{2}$	925.00
14	$22\frac{1}{2}$	23	1250.00
16	24	$25\frac{1}{2}$	1675.00
18	26	28	2300.00

Lunkenheimer Iron Body Gate Valves Bronze Mounted, Quick Operating, Sliding Stem

Flanged Bonnet

For Steam Working Pressures: 2 to 3 Inches, 125 Pounds; 3½, 4, 5 and 6 Inches, 100 Pounds; 8 Inches, 75 Pounds; 10 and 12 Inches, 50 Pounds



No. 1579, Screwed



No. 1580, Flanged

Iron body, bonnet and gland; bronze stem, disc faces and seat rings; gland and stuffing box bronze bushed. Thumbscrew attachment holds disc in any desired position.

				A	
Size Inches	FACE TO Screwed	Flanged	Diam. Flanges Inches	No. 1579 Screwed	No. 1589 Flanged
2	$5\frac{1}{4}$	7	6	\$33.00	\$36.00
21/2	$5\frac{8}{4}$	71/2	7	38.00	41.00
3	65_{16}	8	$7\frac{1}{2}$	43.00	47.00
31/2	$6\frac{5}{8}$	81/2	81/2	55.00	60.00
4	$7\frac{1}{16}$	9	9	60.00	65.00
5	8	10	10	85.00	88.00
6	$8\frac{3}{4}$	101/2	11	97.00	100.00
8	* * *	$11\frac{1}{2}$	$13\frac{1}{2}$		170.00
10		13	16		250.00
12		14	19		375.00

Lunkenheimer Clip Iron Body Gate Valves

Wedge Disc, Rising Stem, Inside Screw, Bolted Bonnet

For 100 Pounds Steam Working Pressure





No. 600, Screwed

No. 638, Flanged

This valve is double seated. All parts are renewable. The stuffing box is repackable when the valve is full open and under pressure.

The Lunkenheimer Clip Gate Valve is also procurable in the all-iron pattern for use in handling liquids which attack alloys

of copper.

	FACE 1	O FACE	Diameter	PRICE, EACH		
Size	INC.	HES -	Flanges	No. 600	No. 638	
Inches	Screwed	Flanged	Inches	Screwed	Flanged	
1/2	2			\$2.00		
3/4	25/6		* * *	2.35		
1	$2\frac{1}{2}$	$3\frac{3}{16}$	4	2.50	\$3.00	
11/4	23/4	$3\frac{1}{2}$	41/2	3.50	4.90	
11/2	31/6	. 33/4	5	5.00	6.00	
2	$3\frac{1}{2}$	4	6	7.50	8.50	
21/2	4	415/18	7	12.00	13.50	
3	43/8	51/18	$7\frac{1}{2}$	15.00	16.90	

Lunkenheimer Clip Iron Body Gate Valves

Bronze Mounted, Quick Operating, Wedge Disc Bolted Bonnet

For 50 Pounds Steam Working Pressure





No. 639. Screwed

No. 640, Flanged

This valve is double seated and takes pressure from either end.

All parts are renewable. The stuffing box is repackable when the valve is full open and under pressure.

This valve is also procurable in the all-iron pattern for handling liquids which attack alloys of copper.

FACE TO FACE			Diameter	PRICE, EACH		
Size	Inci		Flanges	No. 639	No. 640	
Inches	Screwed	Flanged	Inches	Screwed	Flanged	
1/2	2			\$2.00		
3/4	$2\frac{5}{16}$	* * *.		2.35		
1	$2\frac{1}{2}$	$3\frac{3}{16}$	4	2.50	\$3.00	
11/4	23/4	$3\frac{1}{2}$	$4\frac{1}{2}$	3.50	4.90	
11/2	31/6	33/4	5	5.00	6.00	
2	$3\frac{1}{2}$	4	6	7.50	8.50	
21/2	4	415/18	7	12.00	13.50	
3	43/2	51/6	71/2	15.00	16.90	

Lunkenheimer Clip All Iron Gate Valves

Quick Operating, Sliding Stem, Bolted Bonnet

For 50 Pounds Working Pressure



No. 321, Screwed

Designed for the handling of creosote, alkaline solutions, etc., such as attack brass or bronze alloys.

The steel clip which unites the body and bonnet enables quick and easy assembling and disassembling for cleansing and repairs and in addition gives strength and rigidity to the body.

Size		O FACE	Diam. Flanges	No. 321 No. 320		
Inches	Screwed	Flanged	Inches	Screwed	Flanged	
$\frac{1}{2}$ $\frac{3}{4}$	2		* * * *	\$2.00		
- 1/4	2 /16	0.04		2.35		
1	$2\frac{1}{2}$	33/6	4	2.50	\$3.00	
11/4	23/4	31/2	$4\frac{1}{2}$	3.50	4.90.	
11/2	31/6	33/4	5	5.00	6.00	
2	$3\frac{1}{2}$	4	6	7.50	8.50	
$2^{1/2}$	4	415/6	7	12.00	13.50	
3	43/8	51/6	71/2	15.00	16.90	

Lunkenheimer Clip All Iron Gate Valves Wedge Disc, Rising Stem, Inside Screw Bolted Bonnet

For 100 Pounds Working Pressure



No. 319, Screwed

Designed particularly for the handling of creosote, alkaline solutions, etc., such as attack brass or bronze alloys.

The steel clip which unites the body and bonnet enables quick and easy assembling and disassembling for cleansing and repairs and in addition provides strength and rigidity to the body.

Size Inches		Flanged	Diam. Flanges	No. 319 No. 318		
Inches	ocrewed	rianged	Inches	Screwed	Flanged	
1/2	2			\$2.00		
3/4	$2\frac{5}{16}$	2.2.5		2.35		
1	$2\frac{1}{2}$	33/16	4	2.50	\$3.00	
11/4	$2\overline{3}_{4}^{\overline{2}}$	$3\frac{1}{2}$	$4\frac{1}{2}$	3.50	4.90	
$1\frac{1}{2}$	$3\frac{1}{16}$	$3\frac{3}{4}$	5	5.00	6.00	
2	$3\frac{1}{2}$	4	6	7.50	8.50	
21/2	4	415/6	7	12.00	13.50	
3	$4\frac{3}{8}$	51/16	$7\frac{1}{2}$	15.00	16.90	

No. 1425 Lunkenheimer Steel Monel Mounted Gate Valves

Wedge Disc, Rising Stem, Outside Screw Flanged Bonnet and Yoke

For 300 Pounds Steam Working Pressure; 750° F. Total Temperature



Regularly furnished with Valve-steel body, yoke and gland; monel metal stem, seat rings, disc faces, disc nut or ring and repacking bushing; Valve-bronze yoke and gland bushings.

The disc is guided by ribs cast in the body which eliminates dragging of the disc upon the seats when the valve is being opened or closed. All parts are renewable, including the seat rings. The stuffing box is repackable under pressure when full open. The stem operates within non-corrosive bearings throughout and at no point does it come in contact with the steel parts, thereby insuring ease of operation. Flanges are faced, drilled and spot faced.

Size Inches $1\frac{1}{2}$ 2 $2\frac{1}{2}$	Face to Face Inches 7½ 8½ 9½	Diam. Flanges Inches 6 $6^{1/2}$ $7^{1/2}$	No. 1425 Flanged Price, Ea. \$125.00 135.00 145.00	Size Inches 6 7 8	Face to Face Inches 1578 1614 1612	$\begin{array}{c} \text{Diam.} \\ \text{Flanges} \\ \text{Inches} \\ 12\frac{1}{2} \\ 14 \\ 15 \end{array}$	No. 1425 Flanged Price, Ea. \$360.00 450.00 525.00
3 3 ¹ / ₂ 4	$11\frac{1}{8}$ $11\frac{7}{8}$ 12	8½ 9 10	160.00 200.00 230.00	10 12 14	$18 \\ 19\frac{3}{4} \\ 22\frac{1}{2}$	$17\frac{1}{2}$ $20\frac{1}{2}$ 23	725.00 900.00 1200.00
5	15	11	300.00	16	24	251/2	1600.00

No. 1426 Lunkenheimer Steel Monel Mounted Gate Valves with By-pass

Wedge Disc, Rising Stem, Outside Screw Flanged Bonnet and Yoke

For 300 Pounds Steam Working Pressure 750° F. Total Temperature

Regularly furnished with Valve-steel body, yoke and gland; monel metal stem, seat rings, disc faces, disc nut or ring and repacking bushing; Valve-bronze yoke and gland bushings.

The disc is guided by ribs cast in the body which eliminates dragging of the disc upon the seats when the valve is being opened or closed. All parts are renewable, including the seat rings. The stuffing box is repackable under pressure when full open. The stem operates within non-corrosive bearings throughout and at no point does it come in contact with the steel parts, thereby insuring ease of operation. Flanges are faced, drilled and spot faced. The seating surfaces of the by-pass valve are regrindable.



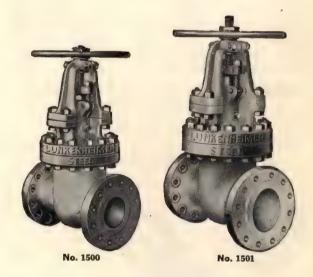
Size Inches	Face to Face Inches	Diam. Flanges Inches	No. 1426 Flanged Price, Ea.	 Size In.	Face to Face Inches	Diam. Flanges Inches	No. 1426 Flanged Price, Ea.
6	$15\frac{7}{8}$ $16\frac{1}{4}$	$12\frac{1}{2}$ 14	\$500.00 600.00	12 14	$19\frac{3}{4}$ $22\frac{1}{2}$	$\frac{20\frac{1}{2}}{23}$	\$1100.00 1400.00
8 10	$\frac{16\frac{1}{2}}{18}$	15 17½	700.00 900.00	16 18	24 26	$\frac{251/2}{28}$	1800.00 2400.00

Lunkenheimer Steel Monel Mounted Wedge Disc Gate Valves

Rising Stem, Outside Screw Flanged Bonnet and Yoke

For Steam Working Pressures: No. 1499, 400 Pounds; No. 1500, 600 Pounds; No. 1501, 900 Pounds 750° F. Total Temperature





No. 1499, furnished in sizes $2\frac{1}{2}$ to 20 inches; No. 1500, furnished in sizes $2\frac{1}{2}$ to 16 inches and No. 1501, furnished in sizes $2\frac{1}{2}$ to 16 inches.

These valves are made in accordance with the American steel flange standards.

Bodies, bonnets, yokes and discs are of cast steel; disc rings and seat rings of forged monel; stems of rolled monel; repacking bushings, stuffing box bushings, cooling chamber plugs, and gland bushings of monel and yoke bushings of manganese bronze.

Valves are regularly furnished with ¼-inch raised face. Valves with male and female, tongue and groove, midwest or surgol flange facings are also procurable.

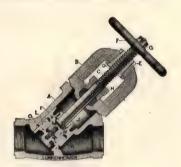
Valves 6 inches and larger may be obtained with motor control.

By-pass valves are furnished in sizes 5 inches and larger. Prices upon application.

Lunkenheimer Iron Body Straightway or Y Blow-off Valves

Outside Screw, Flanged Yoke Bonnet

For 125 Pounds Steam Working Pressure



No. 935, Screwed Sectional View

The disc is reversible and the disc face alloy can be melted out and replaced when worn. The disc locknut is provided with an annular extension which protects the disc face and also provides a self-cleansing flow across the seating surface. The seat, disc and all other parts of the valve are renewable. All stem bearings—stuffing box, gland and yoke—are bronze

Orders should specify number and size.

Size	FACE TO INCE		Diam. Flanges	No. 935 No. 305		
In.	Screwed	Flanged	In.	Screwed	Flanged	
11/2	$6\frac{1}{2}$	9	5	\$13.00	\$14.50	
2	75/6	$10\frac{3}{8}$	6	16.50	18.00	
21/2	91/8	115/8	7	22.00	25.00	

Lunkenheimer Iron Body Straightway or Y Blow-off Valves

Outside Screw, Flanged Yoke Bonnet

For 250 Pounds Steam Working Pressure



No. 1351, Screwed

The disc is reversible and the disc face alloy can be melted out and replaced when worn. The disc locknut is provided with an annular extension which protects the disc face and also provides a self-cleansing flow across the seating surface. The seat, disc, and all other parts of the valve are renewable. All stem bearings—stuffing box, gland and yoke—are bronze

Orders should specify number and size.

Size	FACE T INCI	TES	Diam. Flanges	No. 1351	EACH- No. 1352
In. 11/2	Serd. 73/8	Flgd. 111/4	In.	Serd. \$19.50	Flgd. \$22.00
2	91/8	$12\frac{7}{8}$	$\frac{61}{2}$	25.00	28.00
21/2	$10\frac{3}{8}$	143/4	$7\frac{1}{2}$	33.00	38.00

Lunkenheimer Duro Iron Body Blow-Off Valves

Outside Screw, Flanged Yoke Bonnet



No. 897, Flanged

For 250 Pounds Steam Working Pressure

The Duro Valve is of the angle type, which not only permits an unobstructed flow opening through the valve greater than the nominal area of the connecting pipe, but also lends itself most readily to a seat and disc construction which affords maximum protection to these parts when blowing down, and causes effective cleansing of the seating surfaces immediately prior to valve closure. All parts are renewable.

Provided with stem of a special bronze composition mounted and guided in bronze bushings—and, unless otherwise ordered, with a double faced, reversible disc having seating faces of Disc-alloy. Seat and seat ring bushing are made of

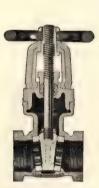
bronze.

					20	77	
				XX7 A	PRICE,	FACH-	
				WITH ALI	LOY DISC		
				FACES, BR	ONZE SEAT	WITH SOLI	MONEL
	CENTER '	TO FACE	Diam.	AND SEAT	BUSHING	DISC AND	
Size	Inci	HES	Flanges	No. 896	No. 897	No. 896	No. 897
In.	Serd.	Flgd.	In.	Berd.	Flgd.	Serd.	Flgd.
11/4	$2^{5/8}$	33/8	5	\$10.70	\$12.00	Prices	Prices
11/2	27/8	4	6	12.50	14.00	upon	upon
2	41/8	45/8	$6\frac{1}{2}$	16.00	18.00	Appli-	Appli-
$2\frac{1}{2}$	43/4	$5\frac{1}{4}$	$7\frac{1}{2}$	21.00	23.00	cation	cation

Lunkenheimer SA Anti-acid Gate Valves

Wedge Disc-Rising Stem-Outside Screw

For 50 Pounds Working Pressure





No. 1406, Flanged

Particularly for use in sludge acid lines. Also adapted for handling slightly acidulous alum solution, fatty acids, salt solutions, and oils bearing corrosive sulphur.

	FACE TO		Diam.	PRICE	, EACH
Size	INC	HES	Flanges	No. 1411	No. 1406
In.	Screwed	Flanged	In.	Screwed	Flanged
3/4	$2\frac{3}{4}$			\$50.00	
1	35/16			60.00	
11/4	35/8			70.00	
$1\frac{1}{2}$	315/6			80.00	
2	49/16	$4\frac{3}{4}$	-6	100.00	\$160.00
$\frac{2^{1/2}}{3}$		$5\frac{1}{4}$	7		185.00
3		$5\frac{5}{8}$	71/2		225.00
4		$6\frac{7}{8}$	9	*	400.00
6		81/4	11	,	600.00
8	***	$9\frac{3}{8}$	$13\frac{1}{2}$		1000.00

No. 629 Lunkenheimer Bronze Pop Safety Valves



Plate W-631

Encased Spring, Angle Outlet For 250 Pounds Steam Working Pressure

Outlet connection of encased spring valves is one size larger than the inlet. Has

When ordering, state size of inlet and pressure at which valves are to relieve.

Size Inlet Inches	No. 629 Price	Sine Inlet	No. 629 Price
	Each	Inches	Each
3/8	\$6.00	11/2	\$12.40
3/2	6.50 7.00	2	19.50
1 74	8.20	21/2	30.00
11/4	9.80	₩ 3	41.00
- /4	3.00		

No. 433 Lunkenheimer Bronze Pop Safety Valves

Encased Spring, Top Outlet

For 250 Pounds Steam Working Pressure

Outlet connection of encased spring valves is one size larger than the inlet. Has male inlet.

When ordering, state size of inlet and pressure at which valves are to relieve.

Size	No. 433	Size	No. 433
Inlet	Price	Inlet	Price
Inches	Each	Inches	Each
3/8	\$5.50	1½	\$11.50
1/2	6.00	2	18.00
1 3/4	6.50 7.50	2 ¹ / ₂	28.00 38.00
11/4	9.00		00100

No. 44 Lunkenheimer Bronze Pop Safety Valves

Outside Spring, Angle Outlet

For 250 Pounds Steam Working Pressure

The outlet and inlet are the same size. Has

When ordering, state size of inlet and pressure at which valves are to relieve.

Size Inlet	No. 44 Price	Size Inlet	No. 44 Price
Inches	Each	Inches	Each
3/4	\$19.00	2	\$38.00
1	21.00	21/2	50.00
11/4	25.00	3	65.00
$1\frac{1}{2}$	30 00		

No. 630 Lunkenheimer Iron Body Pop Safety Valves

Bronze Mounted, Encased Spring, Angle Outlet For 250 Pounds Steam

Working Pressure Prices include either straight or side lever. Has flanged inlet and female screwed outlet.

	Center		P	RICE, EACH-	
Size Inlet In.	to Face of Inlet In.	Diam. Flanges In.	No. 630 Bronze Seat	No. 630 Nickel Seat	No. 36 Testing Clamp
$\frac{2}{2^{1/2}}$	$\frac{45}{8}$	$\frac{61/2}{71/2}$	\$22.00 32.00	\$29.00 42.00	\$3.00
3	511/16	$8\frac{1}{4}$	40.00	52.00	3.50 4.00
$\frac{31}{2}$	$\frac{63}{8}$	9 10	56.00 72.00	73.00 94.00	5.00 6.00
41/2	73/4	101/2	84.00	110.00	7.00



Lunkenheimer Bronze Pop Safety Valves

For Air Service With Lever For 10 to 250 Pounds Pressure PRICE, EACH No. 1226 Male Inlet Top Outlet \$10.00 10.50 11.00 12.30 14.50 18.50 28.00 45,00 60.00



Lunkenheimer Bronze Air-Gas-Pop Relief Valves

prices on request.

With Cap

For 10 to 250 Pounds Pressure



	Dane	Tile and
	No. 1213	DE, EACH No. 1214
Size	Male Inlet	Female Inlet
Inches	Angle Outlet	Angle Outlet
3/8	\$10.50	\$11.50
1/2	11.00	12.00
3/4	11.50	12.70
1	12.70	14.00
11/4	14.50	16.00
11/2	18.30	20.00
2	27.00	28.80
21/2	44.00	46.00
3	60.00	62.50
Special	pressure settings	

above 250 pounds, prices upon application.

Lunkenheimer Bronze Air-gas Pop Relief Valves

Encased Spring, Angle Outlet For 250 Pounds Steam Working Pressure

The construction of the huddling chamber permits regulation of pressure reduction. The outlet is one pipe size larger than the inlet. No. 1046 has regulating handwheel, nickel seat and male inlet. No. 1045 has cap, nickel seat and male inlet.

Order should specify size of inlet, class of service,-air, gas, etc.,-and pressure at which valves are to relieve.

Size, In- PRICE, EACH Size, In- PRICE, EACH let, In. No. 1046 No. 1045 let, In. No. 1046 No. 1045 3/4 \$11.00 \$10.00 2 \$31.00 \$27.00 12.50 11.50 46.00 42.00 13.50 15.00 3 62.00 57.00 19.00 17.50



No. 1046

No. 1211 Lunkenheimer Bronze Air-gas Pop Relief Valves

Encased Spring, Top Outlet

For 250 Pounds Steam Working Pressure

The construction of the huddling chamber permits regulation of pressure reductiondifference between pressures at time of opening and closing. Order should specify size of inlet, class of service,—air, gas, etc.,—and pressure at which valve is to relieve. Has cap, integral seat and male inlet.



Size Inlet In.	No. 1211 Price Each	Size Inlet In.	No. 1211 Price Each
3/8 1/2	\$8.50 9.00	1½ 2	\$16.50 25.50
3/4	9.50 10.80	21/2	40.00
11/4	12.70	3	54.00

Lunkenheimer Bronze Relief Valves

For Steam Cylinder Service



These valves have top outlet. No. 656 has male inlet; No. 287, female inlet.

An extra charge is made for setting valves at pressures below 10 pounds or above 250 pounds.

Orders should specify number, size of inlet and pressure at which valves are to relieve.

556, Male	Size Inlet Inches 3/8 1/2 3/4	Price, No. 656 Male Inlet \$2.30 2.90 3.60	No. 287 Female Inlet \$2.30 2.90 3.60	Size Inlet Inches $1^{1}/2$ 2 $2^{1}/2$	No. 656 Male Inlet \$7.00 11.00 17.00	No. 287 Female Inlet \$7.00 11.00 17.00
				_		

Lunkenheimer Bronze Relief Valves

For Steam Cylinder Service

These valves have angle outlet. No. 286 has female inlet; No. 658, male inlet.

An extra charge is made for setting valves at pressures below 10 pounds or above 250 pounds.

Orders should specify number, size of inlet and pressure at which valves are to relieve.

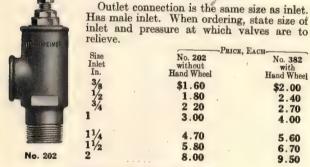
	-					
	PRICE	, EACH		PRICE,	EACH	
Size	No. 658	No. 286	Size	No. 658	No. 286	
Inlet	Male	Female	Inlet	Male	Female	
Inches	Inlet	Inlet	Inches	Inlet	Inlet	
3/2	\$2.80	\$2.80	11/2	\$7.60	\$7.60	
1/2	3.40	3.40	2 2	12.00	12.00	
3/8 1/2 3/4	3.80	3.80	21/2	18.50	18.50	
1	5.00	5.00	. 3	27.50	27.50	
11/	6 00	- 6 00				



No. 658, Male Inlet

Lunkenheimer Bronze Cylinder Relief Valves

Inside Spring, Angle Outlet For 175 Pounds Steam Working Pressure



Red Top Relief Valves

No. 1 relieves pressure in domestic hot water supply before the danger point is reached; prevents explosion in range boilers, gas or tank heaters. No. 2 is the basis of an efficient tank-in-basement hot water heating system. Boiler valves are made of bronze with special nickel piston held to seat by lead ball. They operate on the gravity principle, and have no spring, levers or diaphragm to get out of order.

No. 1 can be set to relieve at 50, 75, 100 and 130 pounds, No. 2 at 30 pounds.

Price,	No. 1	, Size	½ Inch	each each	\$6.00
Frice,	INO. Z	, Size	Linch	·····each	18.00

Lunkenheimer Bronze Relief Valves

For Water or Liquid Service

For 15 to 250 Pounds Pressure



No. 791 Screw Ends Male Inlet, Finished Bronze Regulating Wheel



No. 996 Screw Ends Male Inlet, Rough Iron Regulating Wheel

Outlet connection on angle outlet valves is the same size as inlet.

Order should specify number, size of inlet and pressure at which valve is to relieve.

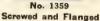
Size Inlet and Outlet Inches	No. 791 Male No. 288 Female Finished with Bronse Wheel	Each No. 996 Male No. 997 Female Rough with Iron Wheel	Size Inlet and Outlet Inches	PRICE, No. 791 Male No. 288 Female Finished with Bronge Wheel	EACH No. 996 Male No. 997 Female Rough with fron Wheel
3/8 1/2 3/4 1	\$4.40 4.60 4.90 5.50	\$4.20 4.30 4.50 5.00	$1\frac{1}{2}$ $2\frac{2^{1}/2}{3}$	\$8.40 13.50 20.50 33.00	\$7.70 12.50 19.00
11/4	6.60	6.00	. 3	33.00	31.00

Lunkenheimer Iron Body Relief Valves

For Liquids

Bronze Mounted, Inside Spring, Angle Outlet For 250 Pounds Steam Working Pressure







No. 1144 Flanged

Outlet connection is the same size as inlet. Inlet flanges of flanged or flanged and screwed valves have ½-inch raised face. Outlet flanges have plain faces.

Orders should state size of inlet and pressure at which valves are to relieve.

Size Inlet Inches	Center to Face Inlet Flange Inches	Diam. Inlet Flanges Inches	PRICE, EACH No. 1359 No. 1144 Sorewed and Flanged Flanged	
2	$3\frac{7}{8}$	$6\frac{1}{2}$	\$25.00	\$25.00
21/2	41/4	71/2	35.00	35.00
3	47/8	81/4	45.00	45.00
$3\frac{1}{2}$	57/6	9	60.00	60.00
4:	6	10	75.00	75.00
4½ 5	65/8	$10\frac{1}{2}$	90.00	90.00
6	037	11	145.00	145.00
Ó	8%8	$12\frac{1}{2}$	180.00	180.00

Everlasting Iron Body Blow-off Valves



Designed to give continual, uninterrupted service, being self-grinding and self-compensating at all points. Every valve is carefully inspected and tested; all valves for boiler and other high pressure service are worked under 250 pounds steam pressure before leaving the factory.

0.		PRICE	E, EACH	
Size In.	Screwed	Flanged	RACK AN	PINION Flanged
1/4 & 3/8	\$9.00 9.00			
3/4	11.00		* * * * 4	****
1	11.00	\$15.00		
$\frac{1^{1}/_{4}}{1^{1}/_{2}}$	16.00 22.00	19.00		****
2	25.00	26.00 30.00	\$34.50	\$39.00
21/2	32.00	39.00	40.00	48.00
3	44.00	50.00 70.00	54.00	60.00
•		70.00	71.00	81.00

Iron Blow Off Cocks

Asbestos U Packed

For Working Pressure: Standard, 150 Pounds Extra Heavy, 250 Pounds

Prices given below apply to screwed and flanged.

Regular cocks, ½ to ¾ inches and extra heavy ½ to 1½ inches made screwed only.



No. 1571 Lunkenheimer Bronze Air Liquid Cocks Female Ends Only



Screwed

This design, which is especially recommended for air, is used with equal success on oil and cold and hot water. It is a packless control device, easily operated, does not require attention, and stays tight.

Proper seating is maintained by self-adjusting spring

mechanism located at bottom of plug which automatically takes up wear, insuring a tight cock at all times.

Insertion of nipples suggested when male ends are necessary. Size Pipe Thread inches 1/2 3/4 1 Price, No. 1571 each \$7.00 8.00 10.00

No. 444 Lunkenheimer Bronze Plain Whistle Valves

Without Stuffing Box
For 200 Pounds Steam Working Pressure



This valve is provided with lever which may be set in line with or at right angles to the valve stem. This advantageous feature in combination with the adjustable fulcrum allows installation of regular valves for vertical, horizontal, and oblique pull operation.

Size	Price	Size	Price
Inches	Each	Inches	Each
1/4	\$2.00	1	\$4.40
3/8	2.00	11/4	5.60
1/2	2.50	11/2	7.40
3/4	3.00	2	14.00

Lunkenheimer Bronze Balanced Whistle Valves

For 200 Pounds Steam Working Pressure

These valves are equipped with combination adjustable lever and fulcrum allowing for vertical, horizontal or oblique pull operation.



No. 691, Screwed

Extra charge for grinding seating surfaces of valves ordered for air service.

	PRICE,	EACH
Size	No. 691	No. 692
Inches	Screwed	Flanged
1	\$18.00	\$22.20
11/4	22 .20	27.50
11/2	26.60	33.60
2	35.50	43.80
21/2	44 .40	53.20
3	62.20	77.00

Lunkenheimer Bronze Balanced Whistle Valves

For 300 Pounds Steam Working Pressure

These valves are equipped with combination adjustable lever and fulcrum allowing for vertical, horizontal or oblique pull operation.

An extra charge will be made

An extra charge will be made for specially grinding the seating surfaces of valves ordered for air services.

	PRICE	EACH -
Size	No. 234	No. 236
nches	Screwed	Flanged
1	\$21.50	\$36.00
11/4	26.00	44.00
11/2	31.00	60.00
2	49.00	80.00
21/2	72.00	110.00
3	92.00	140.00



No. 236, Flanged

No. 635 Lunkenheimer Bronze Regrinding Lever Operated Valves

With Stuffing Box
For 200 Pounds Steam Working Pressure

Being provided with stuffing box, is safe for hand operation, which, coupled with quick opening and closing feature, adapts this pattern to a wide field of service other than whistle control.

Provided with lever which may be set in line with or at right angles to valve stem. This feature in combination with adjustable fulcrum allows installation of regular valves for vertical, horizontal and oblique pull.

horizontal and oblique pull. Size inches $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$ $\frac{3}{4}$ 1 $\frac{11}{4}$ 11/2 2 Price each \$2.30 2.50 3.20 4.30 8.50 10.00 14.00 20.00



Lunkenheimer Bronze Plain Whistles







Without Valve

			Min	PRICE	, EACH -
Diam.	Pipe	Min.	Steam	No. 441	No. 442
Bell	Thread	Boiler	Working	With	Without
Inches	Inches	H.P.	Pres., Lbs.	Valve	
	2.4			vaive	Valve
1	1/4	10	10	\$3.10	\$2.20
11/4	1/4	15	10	3.75	
117	27				2.75
1 /2	/8	20	10	4.00	3.00
11/2	1/2	30	12	5.50	
	/ 4	00	14	3.30	4.35
01/	2/	4=	4 10	_	
21/2	3/4 3/4	45	15	7.40	5.25
3	3/4	60	15	8.50	
					7.25
31/2	1	75	. 20	13.00	9.50
4	11/4	100	35	16.50	12.00
_	-/-	200	00	10.30	12.00
ged .	41/				
5	11/2	175	50	27.50	21.00
6	$1\frac{1}{2}$	250	70	37.50	
0				31.30	31.00
	2	350	90		70.00
10	21/2	450	120		
	2/2			* * * * *	150.00
12	3	600	130		290.00

Extra charge will be made for grinding valves for air service.

Lunkenheimer Bronze Single Bell Chime Whistles

For 200 Pounds Steam Working Pressure







These single bell chime whistles are provided with bells especially designed to eliminate the destructive effect of the heavy vibratory strains incident to operation. Their sections are extremely heavy and the division walls of the tone compartments are cast integral with the outer shell.

An extra charge will be made for grinding the valves for air

service.

Minimum Boiler H. P. 20 30 45 60 75 100 175 250 350 450 600	Minimum Steam Working Pres., Lbs. 12 15 20 40 50 60 75 90 115 130 140	No. 447 with Valve \$7.00 10.00 13.00 16.00 22.00 28.00 44.00 60.00	No. 448 without Valve \$5.50 8.50 10.50 13.50 18.50 24.00 37.00 49.00 120.00 188.00 370.00
	Boiler H. P. 20 30 45 60 75 100 175 250 350 450	Minimum Steam Working H. P. 20 12 30 15 45 20 60 40 75 50 100 60 175 250 90 350 115 450 130	Minimum Steam Working H. P. Pres, Lbs. 20 12 \$7.00 30 15 10.00 45 20 13.00 60 40 16.00 75 50 22.00 100 60 28.00 175 75 44.00 250 90 60.00 350 115 450 130

No. 450 Lunkenheimer Three Whistle Chimes

For 150 Pounds Steam Working Pressure



The three-bell type of chime whistle necessarily provides greater sound-carrying power than whistles of the plain bell or single bell chime designs for the same nominal pipe size connection, and the dimensions of each of the three bells are proportioned to produce harmonious tone blends.

Size No.	Pipe Thread Inches	Diam. and Length Bell, In.	Min. Boiler H.P.	Min. Steam Working Pres., Lbs.	Price Each
2	2	$ \begin{cases} 3\frac{1}{2}x & 8 \\ 4 & x & 9\frac{1}{2} \\ 5 & x11\frac{3}{8} \end{cases} $	350	75	\$40.00
3	3	$\begin{cases} 5 & x10 \\ 6 & x12 \\ 8 & x24 \end{cases}$	500	125	109.00
31/2	3	$\begin{cases} 5 & x15 \\ 6 & x18 \\ 8 & x24 \end{cases}$	500	140	130.00

No. 446 Lunkenheimer Iron Base Fire Alarm Whistles

Bronze Mounted For 150 Pounds Steam Working Pressure Provided with bell of special length to permit of the greatest tone range practicable with the pressure for which each size is designed. The piston provides a means of tone control. Specify whether to be operated by steam or air.

An extra charge for grinding valves for air service.

Diam. Bell Inches	Pipe Thrd. Inches	Minimum Boiler H.P.	Minimum Steam Working Pres., Lbs	No. 446 Price Each
31/2	1	75	20	\$31.00
5	$1\frac{1}{2}$	175	50	40.00
8	2	350	90	100.00



No. 445 Lunkenheimer Mocking **Bird Whistles**

For 200 Pounds Steam Working Pressure



Orders should indicate whether whistles are to be operated by steam or air. An extra charge will be made for grinding valves for air service.

Minimum

Diam.	Pipe	Min.	Steam	No. 445
Bell	Thrd.	Boiler	Working	Price
Inches	In.	H. P.	Pres., Lbs.	Each
$\frac{2\frac{1}{2}}{3}$ $\frac{3\frac{1}{2}}{2}$	1 34	45 60 75	15 15 20	\$10.50 14.00 20.00
4	$1\frac{1}{4}$ $1\frac{1}{2}$ $1\frac{1}{2}$	100	35	28.00
5		175	50	40.00
6		250	70	56.00

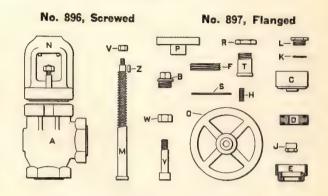
Parts for Lunkenheimer Renewo and Ferrenewo Valves

Orders should specify symbol of the part required and size and figure number of the valve for which part is intended.

Renewo and Ferrenewo bodies furnished with renewable nickel seats. Prices of stem packing, upon application.

nicke	l seats.	Prices o	f stem	packing, Price, Eac	upon a	pplicati	on.
				PRICE, MAC		No. 5A	
					No. 5	Renew	
	Q.	CREWED E			Renewo	Bronze	
Size	RE	NEWO BOI	ND-	NT- 4	Bronze	Round	
Valve	No. 1	No. 2	No. 3	No. 4 Bronze	Hexagona		
In.	Globe	Angle	Cross	Bonnet	Bonnet Rings	Bonnet Rings	
1/4	\$.55	\$.55	\$.85	\$.25	\$.30	rugs	Box
3/2	.65	. 65				* * * *	\$.20
19			1.00		.30		.20
72	.80	.80	1.10	.40	.30		.25
3/4	1.10	1.10	1.25		.35		.30
1	1.40	1.40	1.60	.75	.60		.35
11/4	2.00	2.00	2.40	.90	.85	* * * * *	
11/2	2.75	2.75				* * * *	.35
2			3.10	1.20	1.20		.40
	4.50	4.50	4.75	2.30		\$1.75	. 50
$2^{1/2}$	8.00	8.00	10.00	3.70		3.10	.90
3	11.00	11.00	13.75	5.00		4.20	1.30
		No. 8				- 2120	1.00
	No. 7	Renewo	No. 9				No. 19
	Bronze	Self-cool-	Brass	STEMS FOR	R LARGE	No. 14	Plain
CII	Glands	ing Mall.		SIZE BE	RONZE	Bronze	Rim
Size Valve	for	Iron	Wheel	20	No. 11A	Disc	Hand
In.	Stuffing Box	Hand Wheels	Lock-	No. 10A	Angle	Lock-	Wheels
1/4	DOX		nuts	Globe	and Cross	nuts	Renewo
3/2		\$.18	\$.07	* * * *		* * * *	
1/8		.18	.07				
$\frac{1}{2}$.20	.08				
3/4	\$.15	.20	.09	\$.50	\$.60	\$.09	
1	.15	.20	.09	.65	.75		
11/4	.20	.25				.09	
174			.09	.85	.95	. 13	
11/2	. 25	.30	.12	1.20	1.30	. 15	
2	.30	.45	. 15	1.70	1.80	.20	
21/2	. 45		.20	2.40	2.60	.25	\$.70
3	.60		.35	3.00			
	. 00		. 33		3.40	.45	1.00
				No. 22 I	No. 22A -	No.	26
			1	Ferrenewo	Ferrenewo F Bronze	Iron	Trimmings Complete
	SCRE	WED END	5	Bronze	Round	Ball	for
Size	FERRE	newo Bor	DIES	Hexagonal		Pattern	Renewo
Valve	No. 20	No. 20 A	No. 20B	Bonnet	Bonnet		lobe, Angle
In.	Globe	Angle	Cross	Rings	Rings	Wheels	and Cross
1/4 3/0	\$.35	\$.35	\$.50	\$.30		\$.18	\$.80
3/8	.40	.40	. 60	.30		.18	.80
1/2	. 50	.50	.70	.30		.20	1.05
3/4	.70	.70	.80	.35			
1 /4						.20	1.45
41/	.90	.90	1.05	.60		.20	1.85
11/4	1.25	1.25	1.50	.85		.25	2.65
11/2	1.75	1.75	2.00	1.20		.30	3.65
2	2.80	2.80	3.00		\$1.75	.45	5.80
21/2			0.00		41.75	.40	
3					* * * *		10.50
3							14.65
				TH INTE-			
	No. 26		STEMS W	D			
	No. 26	9	GRAL NIC	CKEL DISC			
Size	Wrenche	3	GRAL NIC	CKEL DISC	M-	10	NT 40
Size Valve	Wrencher for Iron		GRAL NIC FOR SMA BRONZE	CKEL DISC LL SIZE VALVES	No.	12 kal	No. 13
	Wrenche	8	GRAL NIC FOR SMA BRONZE No. 10 N	CKEL DISC ALL SIZE VALVES	e Nic	kel	Nickel
Valve In.	Wrencher for Iron Seat Ring Size, No.	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross	No. Nic Di	kel	Nickel Seat
Valve	Wrencher for Iron Seat Ring Size, No. 10	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel	Nickel Seat \$.30
Valve In.	Wrencher for Iron Seat Ring Size, No.	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel	Nickel Seat \$.30
Valve In. 1/4 3/8 1/2 3/4	Wrencher for Iron Seat Ring Size, No. 10 10 10	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel ec	Nickel Seat \$.30 .30 .40
Valve In. 1/4 3/8 1/2 3/4	Wrenches for Iron Seat Ring Size, No. 10 10 10 11	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel 90 55	Nickel Seat \$.30 .30 .40 .50
Valve In. 1/4 3/8 1/2 3/4	Wrenches for Iron Seat Ring Size, No. 10 10 11 11	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic Di	kel 80 55 70 95	Nickel Seat \$.30 .40 .50 .65
Valve In. 1/4 3/8 1/2 3/4	Wrenches for Iron Seat Ring Size, No. 10 10 11 11	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel 80 55 70 95 45	Nickel Seat \$.30 .40 .50 .65
Valve In. 1/4 3/8 1/2 3/4	Wrenches for Iron Seat Ring Size, No. 10 10 11 11	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic Di	kel 80 55 70 95	Nickel Seat \$.30 .40 .50 .65 .90 1.30 2.00
Valve In. 1/4 3/8 1/2 3/4	Wrencher for Iron Seat Ring Size, No. 10 10 10 11 11 11 12 12 13 13 13	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic Di	kel 80 55 70 95	Nickel Seat \$.30 .40 .50 .65 .90 1.30 2.00 3.20
Valve In. 1/4 3/8 1/2 3/4	Wrenches for Iron Seat Ring Size, No. 10 10 11 11	8	GRAL NIC FOR SMA BRONZE No. 10 N Globe \$.40	CKEL DISC ALL SIZE VALVES Io. 11 Angle and Cross \$.65	e Nic	kel 80 55 70 95	Nickel Seat \$.30 .40 .50 .65 .90 1.30 2.00

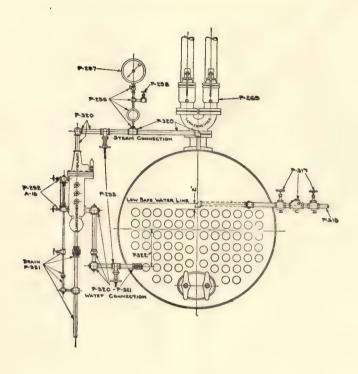
Parts for Lunkenheimer Iron Body Duro Blow-Off Valves

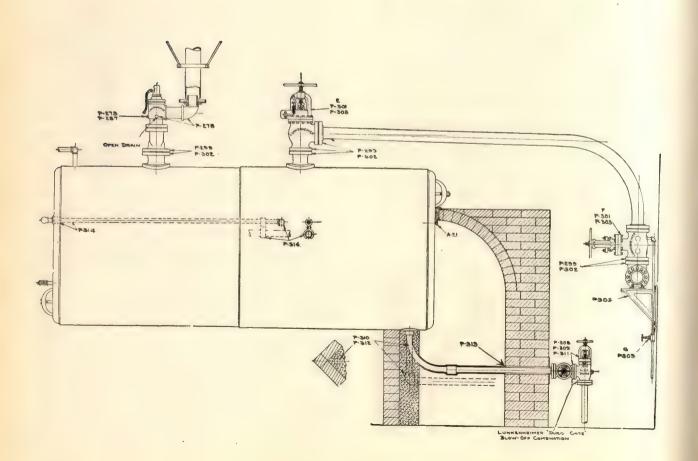


Orders should specify symbol of the part required and number of the valve for which the part is intended.

number of the valve for which th	e part	is inte	nded.	
Sizein.	11/4	$1\frac{1}{2}$	2	$2\frac{1}{2}$
A-Iron Body with Bronze Seat				
Screw Endsea.	\$5.35	\$6.25	\$8.00	\$10.50
A—Same, Flange Endsea.	6.00	7.00	9.00	11.50
A—Iron Body with Monel Seat, Screw Endsea.	Price	s upor	appli	eation.
A—Same, Flange Endsea.	Price	s upon	appli	cation.
B-Cleaning Plugs, Bronzeea.	.45	. 50	.70	1.30
C—Disc Guides, Iron, with Bronze Stud H	.85	.90	1.00	1.50
D-Discs, Iron, with Alloy				
Facesea.	.60	.70	.95	1.30
D—Discs, Solid Monelea.	Price	s upon	applio	eation.
E—Seats, Bronzeea.	.65	.75	1.40	2.00
E—Seats, Monelea.	Price	s upon	applio	eation.
F—Body Rings for Seat, Bronze	20	25	00	1.00
H—Disc Guide Studs, Bronzeea.	.30	.35	.80	1.30
	.07	.10	.15	.20
J—Disc Locknuts, Bronzeea.	.45	.50	.60	.75
K—Disc Locknut Washers, Brass	.04	.04	.05	.07
L—Disc Guide Locknuts, Bronze				, , ,
ea.	. 35	.45	.50	.60
M—Stems, Bronzeea.	2.50	3.00	4.50	5.40
N—Yokes, Iron, with Stuffing Box Studs and Nutsea.	2.10	2.70	2 40	4.00
O—Handwheels, Ironea.			3.40	4.60
P—Stuffing Box Glands, Iron. ea.	.75	.85	1.30	1.50
	.35	.45	.50	.75
R—Yoke Bushing Locknuts, Bronzeea.	.35	.45	.50	.60
S—Copper Gasketsea.	.07	.09	.10	.14
T-Yoke Bushings, Bronzeea.	1.80	1.80	2.00	2.20
V-Handwheel Locknuts, Steel				
ea.	.05	.05	.07	.07
W-Yoke Bolt Nuts, Steel.per set	.10	.10	.10	.12
Y—Yoke Bolts, Steelea.	.10	.10	.10	.12
—Disc Face Alloyper lb.	.70	.70	.70	.70

Application of Lunkenheimer Boiler Mountings Conforming to A. S. M. E. Boiler Code Specifications





Application of Lunkenheimer Boiler Mountings Conforming to A. S. M. E. Boiler Code Specifications

Continued

		LUNKENHEIMER VALVES		
	A.S.M.E. Code		FIGURE Up to	Number 200 to
Para- graph	Rule	Description	200 Lbs. W.S.P.	250 Lbs. W.S.P.
A-21	Fusible Plug Shall be Located at Lowest Permissible		∫ 1326	
P-269	Water Level. Boilers Having More than Either 500 Sq. Ft. of Water Heating Surface or 2000 Lbs. per Hour Generating Ca-	Regular Standard Fusible Plug	(1327	• • • •
	pacity Shall Have Two or More Safety Valves	Twin Pop Safety Valve	752	752
P-273	Only A. S. M. E. Standard Safety Valves are Permissible	Flanged Inlet, Angle Screw Out-		
P-287 ∫ P-278	Escape Pipe Must be at Least Full Size of Discharge Opening, and Must be Supported. A Drain in Required in the Escape Pipe.	let Pop Safety Valve	630	630
P-292	Automatic Water Gauges Specified		1335	1995
A-18 ∫		Bronze Water Gauge		1335
	Drain Valve for Water Gauge	Bronze Renewo Globe Valve Vigilant Water Column	$\begin{array}{c} 73 \\ 919 \end{array}$	16 919
	4 * * * * * * * * * * * * * * * * * * *	Gauge Cocks	1264	1264
P-293	If Valves are Used They Must be Outside Screw and	Description Discourse Williams	001	004
P- 296	Yoke Gate Valves and Must be Locked or Sealed Open Tee or Lever Handle Cock is the Only Stop Permitted Between Gauge and Boiler. Siphon and Fittings of	Bronze Wedge Disc Gate Valves	831	834
P- 297	Brass, Copper or Bronze. Steam Gauge Shall be Graduated to Approximately Double the Working Pressure, but in no Case to Less than 1½ Times the Maximum Allowable Working Pressure	Bronze Steam Gauge Cock	979	472
D 600	of the Boiler		* * * *	
P-298 P-299	1/4-inch Globe Valve for Attaching Test Gauge If Pressure Exceeds 125 Lbs. or if the Fittings are Below	Bronze Regrinding Globe Valve	407	409
P-302	the Water Line, All Fittings Must be Extra Heavy			
P-301	A Stop Valve E is Required on Each Steam Line as Near		000	
	Boiler as is Practicable. Valve Over 2-inch Pipe Size Must be of Outside Screw-and-yoke Type	$\begin{array}{c} \textbf{Valve E Angle Valve} \ \left\{ \begin{array}{l} \text{Scr. Ends} \\ \text{Flg.} \end{array} \right. \end{array}$	882 885	882 885
P-303	If Two or More Boilers are Connected to a Common Pipe,	Valve E Angle Safety Scr. "	1442	1442
	Valves E and F are Both Required, E Should be Non-	Non-return Valve \ Flg. "	1408	1408
	return, and Drain G is Required Between the Two	Valve F-O. S. & Y. Scr. "	1435	1435
	Valves. The Open End of Drain Must be Visible While Operating Valve	Gate Valve Flg. " Valve G Bronze Renewo Globe Valve	$\begin{array}{c} 1436 \\ 73 \end{array}$	1436 16
P-305	Steam Pipe Must be Supported	FAITO O DIOREO MONOTO GIONO TARFO		10
P-308	Globe Valves Must Not be Used	Duro Blow-off Valve Scr. Ends	896	896
P-309	Two Valves or Valve and Cock are Required When Pres-	Duro Blow-on valve { Flg. "	897	897
}	sure Exceeds 125 Lbs., Except Traction and Portable	OS & V. Cata Walra Ser. Ends	1435	1435
P-311	Boilers. Plug Must be Held in Place by Guard or	O.S.& Y. Gate Valve Scr. Finds	1436	1436
	Blow-off Must be of Extra Heavy Pipe, Min. 1-inch, Max.)		
P-310)	2½ Inches, and Fully Protected from Direct Exposure			
}	to Flame. Pipe Must be of One Size from Boiler to			
P-312 J	Point of Discharge. A Bent Pipe is Preferred, Though			
P-313	a Steel Elbow is Permissible			
P-314	Feed Pipe Must be Carried Through the Head or Shell	************************		* * * *
	Near the Front End and be Securely Fastened Inside			
	the Shell Above the Tubes. Feed Water Must Dis-			
	charge at About % the Length from the Front Head Above Central Row of Tubes			
	Above Central Row of Tubes			
P-317	Valves B and C Required on All Boilers. D is Required	(Valves B and D Bronze Renewo		
	Only When Two or More Boilers Are Fed from One	Globe Valve	73	16
	Source. Boiler Pressure Must be on Top of Valve Discs	Valve C Bronze Regrinding Swing Check Valve.	554	624
P-318	Boilers Having More Than 500 Sq. Ft. of Water-heating	(Onota varvo	001	021
	Surface Require Two Means of Feeding, One of Which Shall be a Pump, Inspirator or Injector. On Boilers Having More Than 100 Sq. Ft. of Heating Surface, the	•		
T) 900	Feed Pipe Shall be not Less Than ¾-inch Pipe Size			
P-320	320-Steam Connection, 1-inch (Min.) Iron Pipe and Fit-			
P-321	tings			
	P-321 \(\) and Fittings for Pressure 200 Lbs. or Less;	Bronze Ground Joint Union	458	302
	Iron Pipe Fittings for Higher Pressures	4 4 4	458	302
	321-Drain to Ash Pit, ¾-inch (Min.), Iron Pipe and Fittings	« Renewo Globe Valves	73	16
P-322	6-inch (Min.).			100
	numbers preceding notations refer to paragraphs of A. S. M.			

Lunkenheimer Iron Body Safety Non-return Valves

Bronze Mounted, Outside Screw, Flanged Yoke Bonnet For 250 Pounds Steam Working Pressure



These valves automatically close and instantly cut out a boiler connected in battery when the pressure within the boiler suddenly drops below that of the header; they facilitate the continued service of the other boilers in battery; they enable the plant operatives to safely pursue their duties and safe-guard the life of a human being who may have occasion to enter a dead boiler should the regular stop valve fail or be opened through carelessness.

The valves may be installed with the valve stem in either a vertical or horizontal plane. The tension of the outside spring can be adjusted to over-

come the chattering of the disc

upon the seat. The seating surfaces are regrindable and all parts, including the seat and disc, are renewable. PROP EACH

					W.	4 4 4 4 01-L W.	2 4 0 2 01 1
	979	_				1441 Globe No	
-		o Face	CENTER	TO FACE	Diam.	No. 1442,	No. 1408,
Size	Inc	HES	INC	THES	Flanges	Angle	Angle
In.	Scrd.	Flgd.	Serd	Figd.	In.	Screwed	Flanged
3	113/4	$12\frac{1}{2}$	57/8	$6\frac{1}{4}$	81/4	\$65.00	\$68.00
$3\frac{1}{2}$	$12\frac{3}{4}$	$13\frac{1}{2}$	$6\frac{3}{8}$	63/4	9	78.00	81.00
4	13	14	$6\frac{1}{2}$	7	10	86.00	90.00
41/2		15		$7\frac{1}{2}$	$10\frac{1}{2}$		100.00
5		$15\frac{3}{4}$		$7\frac{7}{8}$	11		115.00
6		$17\frac{1}{2}$		$8\frac{3}{4}$	$12\frac{1}{2}$		135.00
7		$19\frac{1}{4}$		95/8	14		180.00
8		$21\frac{3}{4}$		$10\frac{1}{2}$	15		230.00
10		$25\frac{3}{8}$		$12\frac{1}{4}$	$17\frac{1}{2}$		400.00

Lunkenheimer Cast Steel Safety Non-return Valves

Outside Screw, Flanged Yoke Bonnet For 300 Pounds Steam Working Pressure; 750° F. Total Temperature

These valves automatically close and instantly cut out a boiler connected in battery when the pressure within the boiler suddenly drops below that of the header; they facilitate the continued service of the other boilers in battery.

The valves may be installed with the valve stem in either a vertical or horizontal plane. The tension of the outside spring can be adjusted to overcome chattering of the disc upon the seat. The seating surfaces are regrindable and all parts, including the seat and disc, are renewable.

Steel valves are regularly furnished with flanges faced, drilled and spot faced.

				No. 1410,	Angle
Size Inches	Face to Face Inches	Center to Face Inches	Diam. Flanges Inches	Flanged, No. 1409 Globe	PRICE, EACH No. 1410 Angle
3 3½ 4	$12\frac{1}{2}$ $13\frac{1}{2}$ 14	$\frac{6\frac{1}{4}}{6\frac{3}{4}}$	8½ 9	\$240.00 300.00	\$240.00 300.00
41/2	$15 \\ 15 \\ 15\frac{3}{4}$	$7\frac{1}{2}$ $7\frac{1}{2}$	$10 \\ 10 \frac{1}{2} \\ 11$	330.00 390.00 420.00	330.00 390.00 420.00
6 . 8	$17\frac{1}{2}$ $19\frac{1}{4}$ $21\frac{3}{4}$	8 ³ / ₄ 9 ⁵ / ₈	$12\frac{1}{2}$ 14	540.00 630.00	540.00 630.00
10	$25\frac{3}{8}$	$10\frac{1}{2}$ $12\frac{1}{4}$	$\frac{15}{17\frac{1}{2}}$	840.00 1200.00	840.00 1200.00



	Governors
110	Recommended for the automatic control

No. 1 Fisher Constant Pressure Pump



of maintain uniform discharge pressure, regardless of any variation in the initial pressure. Adjustment on this governor is made by

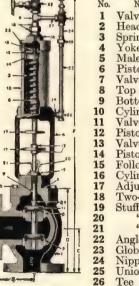
two small wheels, one acting as a lock nut, the other being the adjusting wheel. It is as easy to adjust when set at 400 or 500 pounds as at 10 or 15 pounds, for one does not have to overcome the tension of spring or pump load. No tools are necessary other than the thumb and finger. The long, highly tempored flowible contains tempered, flexible spring is protected from direct pressure and dirt.

The regular brass pipe work as furnished consists of a special tee with globe valve and by-pass or blow-off pipe as required by Board of Underwriters.

Capacity of this governor is 5 to 500 Flanged pounds discharge, depending on the size of spring and cylinder used. Governor is equipped with spring and cylinder best suited to pressures given on order.

	PRICE, EACH————————————————————————————————————							
	-AN		DBE		-An	GLE OR GLO	BE-	
	Screwed	Standard Flanged	Ex. Heavy Flanged		C	Standard	Ex. Heavy	
Size	250-Lb.	125-Lb	250-Lb.	Size	Screwed 250-Lb.	Flanged 125-Lb.	Flanged	
Inches		Pres.	Pres.	Inches	Pres.	Pres.	250-Lb. Pres.	
3/8 1/2 3/4	\$38.00					\$120.00		
12	38.00	£40 00	AFO. 00					
72		\$48.00	\$50.00	4	140.00	145.00	155.00	
3/4	41.00	51.00	55.00	41/2		165.00	175.00	
1	45.00	55.00	57.50	5		180.00	195.00	
11/4	50.00	60.00	62.50	6		225.00	240.00	
11/2	60.00	65.00	67.50	7		275.00	300.00	
2	70.00	75.00	80.00	8		325.00	350.00	
21/2	80.00	85.00	90.00	10		375.00	330.00	
3	100.00	105.00	115.00	10		373.00	* * * * * *	
	200.00	100.00	115.00	* *				

Repairs for No. 1 Fisher Constant Pressure Pump Governors



No. Name of Part Valve Body Head for Body Spring Yoke Male Tee Piston Rod Valve Stem Top Seat Ring Bottom Seat Ring Cylinder Valve Piston Cup Valve Stem Lock Nut Piston Head Follower Nut Cylinder Cap Adjusting Wheels Two-Third Union Stuffing Box Nut 66 Gland Angle Valve Globe Nipple Union Tee 27 Nipple

Valve Lock Nut 33 Long Nipple Blind Flange (on Large Size 34 Nipple Cap Screw or Stud Bolts 31 Valves) 35

Cylinder Cap Gasket

When ordering, give size and serial number of governor, number and name of parts. Prices upon application.

No. 2 Davis Brass Pressure Regulators Piston Type

For 300 Pounds Initial Steam Pressure



The cylinder is made of high grade bronze tubing. The piston is a bronze casting. These parts are accurately sized by lapping. Piston has rectangular grooves cut the entire length of its surface in which steam is condensed to form a water packing. Friction is negligible. Dash pot attaches to cover so counterweights may be placed to either side of regulator.

Used to automatically reduce high steam pressure down to any desired service pressure. Maintains a steady reduced pressure

tains a steady reduced pressure regardless of high pressure fluctuations. Pressure is balanced by counterweight. To change the delivery pressure, change the weights. Dash pot and lever are supported by a swivel bracket and may be placed in any position on either side of regulator. Service pressure determines the amount of counterweight necessary—always specify the pressure.

Valve has no springs, toggles, diaphragm, auxiliary valve,

small ports or packing.

Standard regulators are constructed for steam. Valves of exactly the same outward appearance are constructed for air and water, but have the internal movable parts specially fitted for the service.

Size Inches	Price Each Screwed	Size Inches	Screwed	PRICE, EACH— Standard Flanged	Heavy Flanged
$\frac{1/2}{3/4}$	\$45.00 45.00	$\frac{2}{2^{1/2}}$	\$100.00 125.00	\$110.00 135.00	\$125.00 150.00
1	50.00	3	150.00	160.00	175.00
11/4	55.00	4	200.00	235.00	275.00
11/2	60.00				

No. 2 Davis Iron Body Pressure Regulators

Piston Type

For 200 Pounds Initial Steam Pressure

This regulator is used to automatically reduce high steam pressure down to any desired service pressure. Having a balanced disc it maintains a steady reduced pressure regardless of high pressure fluctuations.

It is made like a pair of balance scales — pressure is balanced by counterweight. To change the delivery pressure simply change the weights. Dash pot and lever are supported by a swivel bracket and may be placed in any position on either side of the regulator. Service pressure of the regulator.

side of the regulator. Service pressure determines the amount of counterweight that is necessary—always specify the pressure.

Valve has no springs, toggles, diaphragm, auxiliary valve, small ports or packing.

Standard regulators are constructed for steam. Valves of exactly the same outward appearance are constructed for air and water, but have the internal movable parts specially fitted for the service.

Size In.	Screwed	-Price, Each- Stand- ard Flanged	Extra Heavy Flanged	Size In.	Stand- ard Flanged	Extra Heavy Flanged
2	\$70.00	\$75.00	\$80.00	6	\$225.00	\$235.00
21/2	85.00	90.00	95.00	7	300.00	325.00
3 ~	100.00	105.00	110.00	8	375.00	400.00
$3^{1/2}$	120.00	125.00	130.00	10	575.00	600.00
4	140.00	145.00	150.00	12	825.00	850.00
5		175.00	185.00	14	1025.00	1075.00

Davis Steel-body Piston-type Pressure Regulators

Monel-metal Trimmed

For 350 Pounds Steam Working Pressure and 800 Degrees
Total Temperature



The Davis Pressure Regulator is used to automatically reduce high steam pressure down to any desired service pressure. Having a balanced disc it maintains a steady reduced pressure regardless of high pressure fluctuations. It is a piston type of valve with counter-weighted lever control. Made like a pair of balance scales; pressure is balanced by counterweight. To change delivery pressure simply change weights.

Service pressure determines amount of counterweight that is necessary; specify pressure. Has no springs or toggles, diaphragm,

auxiliary valve, small ports or packing. Its action is visible. Tested by hand. Cylinder is high-grade bronze tubing. Piston is a bronze casting. Both are accurately sized by lapping. Piston has rectangular grooves cut entire length in which steam is condensed to form a water packing. Friction is negligible. Dash pot attaches to cover so counterweights may be placed to either side of regulator.

CI:	Diameter	Deles	Ct.	Diameter	70.1
Size Inches	Flanges Inches	Price Each	Size	Flanges Inches	Price Each
2	$6\frac{1}{2}$	\$200.00	6	121/2	\$650.00
21/2	$7\frac{1}{2}$	250.00	7	14	850.00
3	81/4	300.00	8	15	1100.00
$3\frac{1}{2}$	9	350.00	10	$17\frac{1}{2}$	1600.00
4	10	400.00	12	$20\frac{1}{2}$	2100.00
5	11	500.00	14	23	2600.00

Davis Balanced Valves

For 200 Pounds Working Pressure



Screwed

The Davis Balanced Valve has double parallel seats and piston disc. It is balanced as to internal pressure and must be operated by some force acting on the lever.

It is not a stop valve and should be used only where there is no objection to a slight leakage. It will handle steam, air, gas, water and other fluids. This valve is connected to the lever by a stem and yoke, the stem being guided by a stuffing box. Provision is made in the post which guides the

lever for limiting the throw of the valve.

Valves 1½-inch and smaller, brass; larger sizes have iron bodies, brass trimmed.

		PRICE, EACH	Extra		PRICE,	Extra
Size In.	Standard Screwed	Standard Flanged	E eavy Flanged	Size In.	Standard Flanged	Heavy Flanged
1/2 3/4	\$20.00 20.00			5	\$150.00 175.00	\$160.00 185.00
1 1/4	25.00 30.00			7 8	225.00 250.00	250.00 275.00
$\frac{11/2}{2}$	35.00 40.00	\$45.00	\$50.00	10 12	350.00 500.00	375.00 525.00
2½ 3	50.00 60.00	55.00 65.00	60.00 70.00	14 16	650.00 800.00	700.00 850.00
3½ 4	80.00 100.00	85.00 105.00	90.00 110.00	18 20	1000.00 1250.00	1050.00 1300.00

Fisher Reducing Valves

No. 10, Vertical Type No. 10A, Inverted Type



No. 10A, Inverted Type Flanged—Sectional View

This valve is applicable to a wide range of conditions, reducing steam, air, water, gas or oil. If valve is to be used on anything besides steam, complete information as to nature of the installation must be given.

Made in two styles: No. 10 vertical type and No. 10A inverted type; globe pattern always furnished unless otherwise specified.

When ordering, specify whether globe or angle pattern is wanted, the maximum and minimum high and low pressure and kind of service.

		PRICE, EAC GLE OR GI	OBE -		A:	PRICE, EACE	
Size Inches	Screwed 250-Lb. Pres.	Standard Flanged 125-Lb. Pres.	Ex. Heavy Flanged 250-Lb. Pres.	Size Inches	Screwed 250-Lb. Pres.	Standard Flanged 125-Lb. Pres.	Ex. Heavy Flanged 250-Lb. Pres.
3/8 1/2 3/4	\$32.00 32.50			31/ ₂	\$95.00 115.00	\$100.00 120.00	\$105.00 125.00
1 3/4	35.00 42.50	\$45.00	\$47.50	4½ 5	*****	130.00 140.00	140.00
11/4 11/2	45.00 50.00	50.00 55.00	55.00	6	* * * * * *	160.00	160.00 180.00
21/2	55.00 65.50	60.00	65.00 75.00	8	*****	200.00	220.00 270.00
3	80.00	85.00	90.00	10 12	* * * * * *	350.00 840.00	480.00 975.00

Fisher Reducing Valves

With Increased Outlet



No. 11A, Inverted Type, Flanged

Designed for pressure or vacuum system of steam heating. It has an increased or expanded outlet which allows for quick expansion of steam after passing through the valve from the high pressure side. Its construction will permit it to be used in service where pressure is measured in ounces, and in vacuum heating systems.

Made in two styles: No. 11, vertical type and No. 11-A, inverted type. In ordering, give information regarding pressure and type of valve wanted, as the inverted valve is always furnished unless otherwise specified.

PRICE, EACH						EACH
Size Inches	Screwed 250-Lb. Pres.	Standard Flanged 125-Lb. Pres.	Ex. Heavy Flanged 250-Lb. Pres.	Size Inches	Standard Flanged 125-Lb. Pres.	Ex. Heavy Flanged 250-Lb. Pres.
3/8X 3/4				3½x 7	\$115.00	\$120.00
1/2×1	35.00	* * * * * *		4 x 8		145.00
$\frac{3}{4} \times 1\frac{1}{2}$	37.50			4½x 9	160.00	170.00
1 x2	45.00	\$47.50	\$50.00	5 x10	200.00	220.00
11/4×21/2	50.00	55.00	60.00	6 x12		260.00
$1\frac{1}{2}$ x3	57.50	62.50	67.50	7 x14	290.00	310.00
2 x4	65.00	70.00	75.00	8 x16	350.00	380.00
21/2×5	80.00	85.00	90.00	10 x12		430.00
3 x6	95.00	100.00	105.00	10 x14	430.00	460.00

No. G-9000 Mueller Water Reducing and Regulating Valves



This valve is suitable for reducing pressures on cold water services from a maximum of 225 pounds to a delivery pressure of 20 to 75 pounds. By giving the No. G-9000 a full seat opening and equipping it with a special reinforced rubber diaphragm, a valve has been produced that will give a maximum flow of water, close regulation and continued efficient service.

This valve will maintain a steady pressure at

the faucet regardless of the pressure at the inlet side. All working parts are easily accessible. It is not necessary to remove the valve from the line if replacements become necessary.

Any properly working regulator acts as a check valve. A reliable relief valve should be installed in connection with the regulator in every case where the building up of the pressure from any cause is to be avoided.

In ordering, give the following information: Highest and lowest initial pressure in pounds, required low, or delivery pressure, size of valve desired, and, if possible, approximate quantity volume to be used per minute.

Size In. 1/4 3/8	Approx. Shipping Weight Pounds $2\frac{3}{4}$ $5\frac{1}{2}$	Price Each \$17.28 18.00		Size In. 1	Approx. Shipping Weight Pounds 15½ 32	Price Each \$31.14
3/8	$\frac{5\frac{1}{2}}{6\frac{1}{2}}$	18.00 18.00	-		32	77.50
1/2 3/4	934	19.36		2 2	55 91	103.86

Iron Body Back Pressure Valves

Horizontal and Vertical



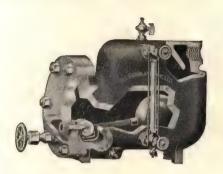
Horizontal, Flanged

Weighted for back pressure up to 5 pounds.

Can be placed in either horizontal or vertical position by changing the position of lever and weight.

Size Inches	Face to Face Flanged Inches	Diameter Flanges Inches	Screwed Price	, Each————————————————————————————————————
21/	* * * *		\$11.00	1 + 1 + 1 +
$\frac{2^{1}/2}{3}$	****		13.00 15.00	
31/2		* * * *	19.00	* * * * * *
5	13	10.	22.50	
6	14	10 11	33.50 43.00	\$37.00
7	16	$12\frac{1}{2}$	70.00	47.00 75.00
8	$19\frac{1}{2}$ $24\frac{1}{2}$	$13\frac{1}{2}$	85.00	90.00
12	$\frac{2472}{2712}$	$\begin{array}{c} 16 \\ 19 \end{array}$	* * * * 3	130.00
	/ 20			. 400.00

Peters Corliss Valve Steam Traps



Simple in design. There are but 4 parts to the valve mechanism. The body and the cover of the trap are made of ferro-steel, while the valve casing is of a high grade special steam phosphor bronze. The Corliss valve itself is made of vanadium bronze which is hard and resists wear. A seamless copper re-enforced float is used in Peters Traps while the lever to which the float is attached is made of bronze. Water gauge, air cock and by-pass valve are furnished. Capacities based on 50 pounds pressure.

			——CAPACITIES—		
	Pipe	Maximum	Sq. Ft.	Lineal'	
	Connec-	Discharge	of	Feet of	
Size	tion	Pounds	Heating	1-Inch	Price
No.	In.	per Hour	Discharge	Pipe	Each
1	1/2	1350	3200	9700	\$26.50
2	3/4	2250	5200	15300	28.50
3	1	4320	10000	30000	36.00
4	$1\frac{1}{4}$	7000	16000	48000	43.00
5	$1\frac{1}{2}$	10700	25000	75000	60.00
6	2	11500	27500	82000	82.00
7	$2\frac{1}{2}$	35000	80000	240000	132.00

Sarco Low and High Pressure Steam Traps



The Sarco Low Pressure Steam Trap is used on pressures from 1 to 50 pounds, and the high pressure steam traps are used from 50 to 200 pounds.

It is so designed that the trap may be installed in any position without requiring supports and floor space.

Inlet		PRICE,		Inlet		PRICE	. EACH
and		Low	High	and		Low	High
Outlet	Weight	Pres-	Pres-	Outlet	Weight	Pres-	Pres-
In.	Pounds	sure	sure	In.	Pounds	sure	sure
3/8	1%	\$6.00	\$7.75	11/4	$11\frac{1}{2}$	\$24.15	\$28.50
1/2	1%	6.00		11/2	18	30.00	34.50
1/2	$2\frac{1}{4}$		7.75	2	29	38.70	48.30
1/2 1/2 3/4	23/8	9.45	10.35	$2\frac{1}{2}$	44	51.75	60.00
1	$3\frac{1}{4}$	11.25	12.00	3	49	60.00	75.00

No. 9 Sarco Bronze Steam Traps

This trap is operated thermostatically, and cannot air bind. It has unusually great capacity as it has a large valve area and a quick high lift when discharging. It closes instantaneously and allows no live steam to pass.

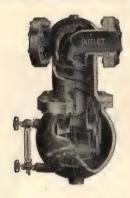
The pressure within the thermostatic, or motor, element balances against the steam pressure and thus the trap is self-adjusting over the entire range from 0 to 100 pounds.

Type 9-1 for pressures from 0 to 30 pounds, brass composition valve head and side.

Type 9-2 for pressures from 0 to 100 pounds, monel metal valve head and seat.

Size	Weight	PRICE	EACH
Inches	Pounds	Type 9-1	Type 9-2
$\frac{1}{2}$ $\frac{3}{4}$	17/8	\$7.50	\$8.50
3/4	2	10.50	11.50
1	$2\frac{7}{8}$	13.50	14.50

Triumph Horizontal Oil Separators



This oil separator when of proper size, and when properly installed, will deliver water of condensation 99.995 per cent pure.

Prices include companion flanges, bolts and water gauge.

	Face to	Diam.	Diam.	Size		
Size	Face	Flanges	Body	Drain	Wt.	Price
In.	In.	In.	In.	ln.	Lbs.	Each
2	91/4	7	10	11/4	125	\$90.00
$2^{1/2}$	$9\frac{1}{4}$	7	10	$1\frac{1}{4}$	125	90.00
3	$10\frac{1}{2}$	$7\frac{1}{2}$	12	11/4	175	100.00
$3\frac{1}{2}$	13	9	$15\frac{1}{2}$	$1\frac{1}{2}$	325	125.00
4	13	9	$15\frac{1}{2}$	11/2	325	125.00
$4^{1/2}$	$13\frac{1}{2}$	10	18	11/2	375	160.00
$\frac{4^{1}/2}{5}$	$13\frac{1}{2}$	10	18	$1\frac{1}{2}$	375	160.00
6	161/4	11	20	$1\frac{1}{2}$	600	180.00
7	19	$13\frac{1}{2}$	$23\frac{1}{2}$	2	850	300.00
8	19	$13\frac{1}{2}$	$23\frac{1}{2}$	2	850	300.00
9	23	16	24	$2\frac{1}{2}$	1250	400.00
10	23	16	24	$2\frac{1}{2}$	1250	400.00

Triumph Vertical Oil Separators



This separator is also made for ascending current by reversing the spiral and the concentrator

Without restricting the passage of exhaust steam or causing any perceptible back pressure, the steam takes a spiral motion, at the same time striking many corrugated baffles, which eliminates the oil, delivers it to special drains and boxes in such a manner that it is syphoned into lower receiving chambers, hence to proper grease trap.

No oil can be picked up by the flow of steam.

The separation and elimination of oil from exhaust, which is the most difficult of all work a separator is called upon to do, is easily and perfectly performed.

Prices include companion flanges, bolts and water gauge.

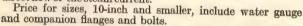
	Face to	Diam.	Diam.	Size		- 0
Size	Face	Flanges	Body	Drain	Weight	Price
In.	In.	In.	In.	In.	Pounds	Each
4	2.11		2.44	2.440	75	\$80.00
1				1		
11/2	16	5	10	1	75	80.00
2	16	6	10	$1\frac{1}{4}$	100	90.00
$2^{1/2}$	16	7	10	11/4	100	90.00
3 ~	22	71/2	12	$1\frac{1}{4}$	150	100.00
31/2	26	81/2	15	11/2	250	125.00
4	26	9	15	11/2	250	125.00
41/2	30	$9\frac{1}{4}$	16	11/2	300	160.00
5	30	10	16	$1\frac{1}{2}$	300	160.00
6	34	11	18	$1^{1/2}$	350	180.00
7	40	$12\frac{1}{2}$	22	2	625	300.00
8	40	$13\frac{1}{2}$	22	2	625	300.00
9	44	15	24	$2\frac{1}{2}$	700	400.00
10	44	16	24	$2\frac{1}{2}$	700	400.00

Victor Horizontal Separators For Steam, Oil, Gas or Air

Steam Working Pressures: Standard, 125 Pounds; Extra Heavy, 250 Pounds

The steam entering separator impinges on a curved corrugated baffle, which precipitates the entrained moisture or oil.

Passing around the outer ends of this baffle the steam impinges on two straight baffles with the same effect, after which the dry steam is again united and passes out of the separator. The entrained moisture or heavy particles of oil adhering to the baffles are forced downward and drop into the lower portion or storage chamber of the separator, out of the direct flow of the steam current.



T Grand Control								
	FACE TO FACE			DIAM. FLANGES		WEIGHT		
01		IN.	In.		Por	INDS	PRICE, EACH	
Size	Stand-	Extra	Stand-	Extra	Stand-		Stand-	Extra
In.	ard	Heavy	ard	Heavy	ard	Heavy	ard.	Heavy
2	9	91/2	6	$6\frac{1}{2}$	70	75	\$40.00	\$40.00
21/2	$12\frac{1}{4}$	13	71/2	71/2	125	140	50.00	50.00
3	$12\frac{1}{4}$	13	$7\frac{1}{2}$	81/4	125	140	50.00	50.00
31/2	141/4	143/4	9	9	190	220	70.00	70.00
4	141/4	143/4	9	10	190	220	70.00	70.00
41/2	15	$15\frac{1}{2}$	10	$10\frac{1}{2}$	275	280	80.00	80.00
5	15	$15\frac{1}{2}$	10	11	275	280	80.00	80.00
6	19	$20\frac{1}{4}$	11	121/2	375	425	110.00	110.00
7	21	22	$13\frac{1}{2}$	14	480	540	160.00	160.00
8	21	22	$13\frac{1}{2}$	15	480	540	160.00	160.00
9	243/4	26	16	$16\frac{1}{4}$	950	1025	220.00	220.00
10	243/4	26	16	171/2	950	1025	220.00	220.00
12	25	27	19	20		1150	250.00	250.00
14	28	$29\frac{1}{2}$	21	$22\frac{1}{2}$	1300	1350	300.00	300.00

Victor Vertical Separators

For Steam, Oil, Gas or Air

Steam Working Pressures: Standard, 125 Pounds; Extra Heavy, 250 Pounds



The steam entering the separator impinges on a conical hood, is expanded and passing around the lower portion of the hood encounters a baffle, which changes its direction of flow.

The dry steam then passes under the hood, and descends directly into the engine throttle.

The oil or condensation is forced to the bottom of the hood and is then precipitated to the lower portion of the separator out of the flow of steam from where it is drained.

Prices for sizes, 10-inch and smaller include water gauge and companion flanges and bolts.

,		TO FACE		FLANGES	W	EIGHT		
Size	Stand-		II.	N.	Po	UNDS	Pric	B. EACH
In.	ard	Heavy	Stand- ard		Stand-		Stand-	Extra
		-		Heavy	ard	Heavy	ard	Heav
2	151/2	16	6	$6\frac{1}{2}$	70	75	\$40.00	\$40.00
$2^{1/2}$	$18\frac{1}{2}$	19	$7\frac{1}{2}$	$7\frac{1}{2}$	110	140	50.00	50.00
3	181/2	19	$7\frac{1}{2}$	81/4	110	140	50.00	50.00
$3\frac{1}{2}$	22	$22\frac{1}{2}$	9	9	175	220	70.00	
4	22	$22\frac{1}{2}$	9	10	175			70.00
41/2	251/2	$26\frac{1}{2}$	10			220	70.00	70.00
5	251/2	9617		101/2	275	280	80.00	80.00
2	0717	$26\frac{1}{2}$	10	11	275	280	80.00	80.00
6	271/2	28	11	121/2	375	425	110.00	110.00
7	281/4	$29\frac{1}{4}$	$12\frac{1}{2}$	14	480	540	160.00	160.00
8	301/4	31	$13\frac{1}{2}$	15	480	540	160.00	160.00
9	44	451/4	16	161/4	950	1025	220.00	
10	44	4514	16	1712	950			220.00
12	47	$50\frac{1}{2}$	19	2172		1025	220.00	220.00
14		501/		20	1100	1150	250.00	250.00
7.2	52	$56\frac{1}{2}$	21	$22\frac{1}{2}$	1300	1350	300.00	300.00

Victor Extra Heavy Steel Vertical Receiver Steam Separators

The Victor Extra Heavy Steel Vertical Receiver Steam Separator is made with plate steel heads, plate steel shell and for any desired pressure.

Bottom flanges are drilled to templates furnished when desiring to place same direct on throttle valves.



Size Inches	Diam. Flanges Inches	Face to Face Inches	Size Drain Inches	Weight] Pounds	Price Each
4	10	46	1	650	\$140.00
41/2	$\frac{101}{2}$	50	11/4	750	170.00
5	$11 \\ 12\frac{1}{2}$	50 54	11/4	800	170.00
7	14	58	11/4	$\frac{1100}{1400}$	230.00
8	15	62	114	1750	300.00 375.00
9	$16\frac{1}{4}$	66	$1\frac{1}{2}$	2100	450.00
10 12	$17\frac{1}{2}$ $20\frac{1}{2}$	69 78	11/2	2400	475.00
14	23	85	$\frac{1}{2}$	$\frac{2800}{3250}$	540.00
15	241/2	90	$\overline{2}$	3575	625.00 710.00
16	251/2	96	21/2	4000	800.00
18 20	$\frac{28}{30\frac{1}{2}}$	$\frac{102}{111}$	3	4750	900.00
	0072	TIL	0	5800	1025.00

No. W-20 Victor Steel Receiver Separators



The No. W-20 Victor Steel Receiver Separator is made for low pressure oil service as illustrated, or high pressure steam service up to 300 pounds.

State service and pressure when making application for prices.

Base ring and legs are furnished with this separator upon request.

Prices and complete information upon application.



Penberthy Noiseless Steam Water Heaters

The use of this heater does away with all noise such as otherwise occurs when heating a tank or barrel of water or other liquid with steam. It is of special value to creameries, chemical works, breweries, etc.

Size No.	Steam Pipe In.	Disch. Pipe In.	Cap.	Price Each	Size No.	Steam Pipe In.	Disch. Pipe In.	* Cap.	Price Each
F	1/4 3/8	3/8 1/2	50 60	\$1.50 1.75	K	1 11/4	$\frac{11_4}{11_2}$	125 175	\$3.00 4.00
H	1/2 3/4	1 1	75 100	2.00 2.50	M N	$\frac{1}{2}\frac{1}{2}$	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	250 500	5.00

*Gallons of water heated from 70° to 210° in 30 minutes with 70 pounds steam pressure.

Triumph Exhaust Pipe Heads





Screwed

Gives perfect separation of steam and water and keeps oil and moisture from the roof and walls of building. Its cast iron construction renders it practically indestructible by the elements.

It is light, durable and self-contained. Besides removing oil and water, it also acts as a muffler and eliminates all ex-

haust noises.

Sizes from 1 to 4½ inches inclusive are made for screwed connection. Sizes from 5 to 18 inches inclusive are made with flanged connection, and a companion flange and bolts are furnished with the exhaust head. Companion flange larger than 10 inches. extra.

Size	•		Size		
Exhaust			Exhaust		
Pipe	Weight	Price	Pipe	Weight	Price
Inches	Pounds	Each	Inches	Pounds	Each
1	14	\$18.00	6	98	\$55.00
$1\frac{1}{2}$	14	18.00	7	160	70.00
2	22	23.00	8	180	85.00
21/2	22	23.00	10	300	120.00
3 ~	30	28.00	12	480	140.00
$3\frac{1}{2}$	30	28.00	14	550	225.00
4	38	38.00	16	600	240.00
41/2	38	38.00	18	820	290.00
5	85	45.00			

Iron Body Foot Valves and Strainers







Strainer

Foot Valves, Screwed

I.P. Size In.	Black	EACH————————————————————————————————————	I.P. Size In.	Black PRICE,	Each—Galvanized
3/4	\$1.15	\$1.75	3	\$3.90	\$5.75
1	1.30	2.00	31/2	5.60	8.50
11/4	1.40	2.10	4	7.30	11.00
$1\frac{1}{2}$	1.90	2.85	5	11.25	16.75
2	2.40	3.60	6	14.75	22.00
$2^{1/2}$	3.30	5.00	8	41.00	62.00

Strainers

I.P. Size In.	PRICE,	Each————————————————————————————————————	I.P. Size In.	Black	EACH————————————————————————————————————
11/4	\$.50	\$.75	31/2	\$3.00	\$4.50
$\frac{11/2}{2}$.75 1.00	1.00 1.50	5	3.75 4.75	6.00 7.00
21/2	1.50	2.00	6	6,50	10.00
3	2.00	3.00	8	15 00	20 00



Blakeslee Jet Pumps

For raising water and other liquids. Adapted for tanneries, breweries, creameries, railroad water stations, etc.

Size	Suction	Discharge	Steam	Capacity	
Pump	Pipe	Pipe	Pipe	Gallons	Price
Inches	Inches	Inches	Inches	per Minute	Each
3/4	3/4	1/2	3/8	8 /	\$8.00
1	1	3/4	1/2	15	10.00
11/4	11/4	1	1/3	20	12.00
11/2	11/2	11/2	3/4	30	14.00
2	2	11/2	3/4	40	16.00
21/2	21/2	2	1	50	20.00
3	3 *	21/2	1	60	24.00
4	4	3	2	250	70.00

B KESLI

Blakeslee Deep Well Jet Pumps

Made with iron body, brass tubes. Size of pump must not be larger than flow of well, and placed so it will be under water when starting. It will lift up to 20 feet, if elevation is not more than 30 feet. It should not be more than 20 feet under high water mark.

	Suction		stm.				
	and			Cap.			
					Diam.		
Size	livery	Pipe	ing	Min.	Well	Wt.	Price
In.	In.	In.	In.	Gal	In.	Lbs.	Each
1	1	1/2	1	15	4	10	\$20.00
11/	11/4	1/2	1	20	$4\frac{1}{2}$	12	30.00
11/	$1\frac{1}{2}$	3/4	11/4	30	5	16	40.00
2	2	3/	11/	40	6	16	50.00

McDanie Suction Tees



This is a fitting that will make all bad jobs of steam heating work well.

Stops one steam connection from backing up on another, prevents all noise when heating water by direct blow of steam

It can be used to advantage in making all connections on heating jobs. Where condensation returns to the boilers, put it on wherever two returns come together. It is required wherever two or more connections are made to the same steam trap, as it will cause all the condensation to flow freely into the trap and avoid the trouble of one backing up on another, and one steam trap can be made to answer for several different connections, avoiding the necessity of putting a steam trap on each return, if all are from the same boiler.

All sizes are made of cast iron.

5.50

Standard Tees

		O COLLIE			
	For 100	Pounds St	eam Working	Pressure	
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1/2	\$1.50	11/4	\$2.25	$2\frac{1}{2}$	\$5.50
$\frac{1}{2}$ $\frac{3}{4}$	1.50	11/2	2.75	3	8.00
1	2.00	2	3.50		* * * * *
		Extra H	leavy Tees		
	For 250	Pounds St	eam Working	Pressure	
1	\$3.50	21/2	\$11.00	5	\$43.00

21.00

27.00

60.00

U. S. Automatic Injectors



The regular style can be attached on either side of the boiler. Special styles to fit any condition of piping can be furnished. A dis-tinctive feature is the drip cock (see illustration) which has the following special advantages.

It drains the injector when not in use and thus prevents

By leaving it open injector can be started even though the check valve leaks. This is impossible without a drip cock. By opening the drip

cock injector can be started with lower steam. By leaving it open when not in use the suction pipe is prevented from getting hot or the jet from liming up when the steam or check valve leaks. It makes it possible to take hot water out of a hot suction pipe on a long lift. It is always handy for drawing

hot water for any purpose when the injector is working.

With feed water at 76 degrees Fahrenheit injector will
start on a four foot lift with 15 pounds steam pressure and
work up to 150 pounds steam pressure. Special High Test
Injectors can be furnished in all sizes, upon order, and at no

extra charge.

		Based			ased on	Pipe	_		
		dinary			Water	Connec-		GAL.	
NT.		bular			. P.	tions		HR.	Price
No.	150	oiler	1	er i	Hr.	In.	Max.	Min.	Each
00	1 to		1	to	4	1/4	36	20	\$13.00
0	3 "	6	4	46	8	3/8	65	35	14.00
1	4 "	8	6	66	12	3/8	90	55	16.00
2	8 "	16	10	64	20	1/2	135	65	18.00
3	12 "	22	15	"	30	1/2	180	100	20.00
4	17 "	32	22	46	45	3/4	260	140	25.00
5	20 "	45	25	ш	60	3/4	355	170	30.00
6	40 "	65	45	66	80	1	475	300	40.00
7	45 "	80	50	66	100	1	600	350	45.00
8	50 "	100	60	"	135	11/4	800	425	55.00
9	75 "	135	85	66	165	11/4	1000	525	60.00
10	100 "	180	125	и	235	$1\frac{1}{2}$	1400	800	75.00
11	115 "	255	150	44	320	11/2	1900	950	90.00
12	160 "	320	200	44	380	2	2400	1300	110.00
13	200 "	400	250	66	500	2	3000	1600	125.00
14	300 "	500	325	66	550	2	3600	2000	150.00
15	350 "	550	400	66	600	$2\frac{1}{2}$	4000	2200	175.00
16	400 "	600	500	66	750	$2\frac{1}{2}$	4500	2500	200.00
17	600 "	900	750	66	1000	3	5800	3000	400.00

Repair Parts

When at the same steam pressure at which at injector has for a long time worked satisfactorily, it begins to dribble from overflow, it is an indica-tion that the jets are either clogged by sediment or else worn.

If limed up they should be soaked in a bath of about one part of muriatic acid and eight parts water until clean.

If worn, new parts should be ordered. In ordering parts, always give size and shop number, and specify the parts by the names given below; use no other terms.



					I	RICE, EA	CH-		
J	No. of njector		D Tail Pipe	E, Tail Pipe Nut	A Stem Jet	B Suction Jet	C Deliv- ery Tube	Pelivery Cap.	G, H Overflow Cap and Valve
00 4 6 8	to and "	3 5 7	\$.30 .35 .40	\$.30 .40 .50	\$.80 1.00 1.15	\$.50 .75 1.25	\$1.00 1.10 1.45	\$1.00 1.10 1.45	\$.80 .95 1.00
10 12 15	4	9 11 14 16	.50 .75 1.00 1.20	.65 .85 1.20 1.50	1.35 1.60 2.00 2.50	1.50 1.75 2.00 2.50	1.75 2.00 2.50 4.00	1.75 2.00 2.50 4.00	1.25 1.50 2.00 3.50

Penberthy Automatic Injectors



A high grade automatic machine; meaning, if the current of water is broken by any cause, the injector will pick up the water and re-establish the current to the boiler without the least attention. Every machine is carefully tested, and will work on the following points: Start low, 20 to 22 lbs. steam on 3-foot lift. Work high, 165 to 170 lbs. steam on 3-foot lift. Lift water, 20 to 24 feet on 60 to 80 lbs. steam. Will deliver water to boiler at 160 to 212

degrees, according to temperature of feed water and steam pressure. Water 200 to 212 degrees can nearly always be delivered at nearly all pressures over 50 lbs. by throttling suction valve and delivering minimum capacity. It is advisable in many cases to install an injector large enough so that the supply can be cut down and attain this result, thereby saving fuel. By placing a short piece of pipe having a stopcock, in the overflow, and closing after the injector has started, water 8 to 10 degrees hotter can be handled, but the injector is rendered non-automatic while the stopcock is closed. GALLONS PER

•			
	Н. Р.	H. P.	
	Based on	Based on	Pip

	H. P.	H. P.	1 TO 3-FT, LIFT			
	Based on	Based on	Pipe	60 TO 110 LBS.		
	Ordinary	30 Lbs. Water	Connec-	STEA		
Ci	Tubular	per H. P.	tions	PRESS		Price
Size	Boiler	per Hour	Inches	Max.	Min.	Each
0 .	3 to 6	4 to 8	1/4	60	35	\$15.00
00	4 " 8	6 " 12	3/8	80	45	16.00
\mathbf{A}	8 " 16	10 " 20	1/2	135	70	18.00
AA	12 [#] 22	15 " 30	1/2	180	100	20.00
В	17 " 32	22 " 45	3/4	260	140	25.00
BB	20 " 45	25 " 60	3/4	360	180	30.00
C	40 " 65	45 " 80	1	475	250	40.00
CC	45 " 80	50 " 100	1	600	325	45.00
D	50 " 100	60 " 135	11/4	800	425	55.00
DD	75 " 135	85 " 165	11/4	1000	525	60.00
\mathbf{E}	100 " 180	125 " 235	11/2	1400	740	75.00
EE	115 " 255	150 " 320	$1\frac{1}{2}$	1900	850	90.00
\mathbf{F}	160 " 320	200 " 400	2	2400	1275	110.00
\mathbf{FF}	200 " 400	250 4 500	2	3000	1600	125.00
GG	375 " 600	400 " 750	$2\frac{1}{2}$	4200	2150	200.00

Repair Parts

In ordering parts do not fail to give serial letter and number, which will be found on top of overflow. In referring to or ordering parts, designate them by letter or name.

OO AA

.25 .30

.25

.30 .40

.40

. 55

.60

.30

.50

Size of Injector.....

Suction Jet...

Delivery Jet ...

Coupling Nut.

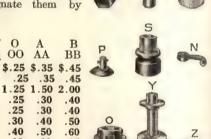
Tail Pipe.....

Overflow Cap.

Strainer.... #-

Valve

-Steam Jet . . . each



.75 1.00 1.00 1.50

N- " Hinge " .10	. 10	.15			- S	
0—Plug 4 .60	.80	1.00	Name of Street, or other Persons	39		
Strainer " .40	.45	. 50		U		
Sin at faint C	D					G
Size of Injector C	DD	\mathbf{E}	EE	F	\mathbf{FF}	GG
R-Steam Jet each \$.55	\$.65	\$.75	\$.75	\$.85	\$1.00	\$2.00
S—Suction Jet " .55	. 65	.75	.75	.85	1.00	3.00
Y-Delivery Jet " 2.50	3.00	3.75	4.50	5.50	6.50	9.00
X-Coupling Nut. " .50	.60	1.25	1.25	1.50	1.50	2.00
V-Tail Pipe " .50	.60	.80	.80	1.00	1.00	1.25
Z-Overflow Cap	.70	.80	.80	.90	.90	1.50
P- " Valve " .7:	5 .90	1.00	1.10	1.25	1.25	1.75
N- " Hinge " .15	.15	.20	.20	.20	.20	.30
0—Plug " 1.25	5 1.50	1.75	1.75	2.00	2.00	4.00

.75

CUNKENNELME

No. 1031 Lunkenheimer Trusty Underwriter Bronze Gasoline Strainers

Horizontal Pattern



The Trusty Gasoline Strainer, having a square removable cap with which the strainer is integral, a bevel metal to metal seat between the cap and body and an arrow on body to indicate di-tection of flow, complies with Underwriters' specifications.

Size Price, No. 1031	inches	1/8	1/4	3/8	1/2
Price, No. 1031	each	\$.90	1.00	1.20	1.55

No. 1032 Lunkenheimer Trusty Underwriter Bronze Gasoline Strainers

Angle Pattern

The Trusty Gasoline Strainer, having a square removable cap with which the strainer is integral a bevel metal to metal seat between the cap and body and an arrow on body to indicate direction of flow, complies with Underwriters' specifications.



Size inc Price, No. 1032	ches 1/8	1/4	3/8	1/2
Price, No. 1032	each \$.90	1.00	1.20	1.55

Hose and Pipe Strainers







	P	BICE, EAC.			PRICE, EACH				
	-	Hose	SHANK		HOSE SHANK				
ize	Pipe	_	Mall,	Size	Pipe		Mall.		
D.	Thrd.	Brass	Iron	In.	Thrd.	Brass	Iron		
3/8 1/2 3/4	\$.40			11/2	\$.60	\$.75	\$.60		
1/2	.40			2	.75				
3/4	. 45	\$.50	\$.40	$2^{1/2}$	1.00				
17	.50	. 55	.45	3	1.50				
1/4	.55	. 60	. 50	4					

Blakeslee Bilge Pumps

This pump is adapted to raising a large amount of water with but little steam. It is not designed to raise water to very great heights, but makes from 18 to 20 feet suction. It is designed to do its work altogether by suction, and should be set so that the discharge opening will be on a line with the point of discharge.



Size	Suction	Discharge	Steam	Cap.	
Pump	Pipe	Pipe	Pipe	per Hour	Price
In.	In.	In.	In.	Gals.	Each
11/2	11/2	11/4	3/4	2400	\$10.00
2	2	11/2	1	3000	14.00
3	3	$2\frac{1}{2}$	1	3600	16.00
4	4	3	$1\frac{1}{4}$	4500	20.00
6	6	4 .	11/2	8000	30.00



No. 153 Bronze Ground Key Gasoline Cocks

Spring Key Type, Lock Washer Rough Body, Lever Handle

Male pipe threaded ends.

Size.....in. 1/8 1/4 Price, No. 153...ea. \$1.15 1.30

No. 62 Bronze Ground Key Gasoline Cocks

Spring Key Type, Lock Washer Rough Body, Lever Handle

Male and female pipe threaded ends.

Size...in. in. 1/8 1/4 Price, No. 62...ea. \$1.15 1.30

No. 63 Bronze Ground Key Gasoline Cocks

Spring Key Type, Lock Washer Rough Body, Lever Handle

Female pipe threaded ends.

Sizein. 1/8 1/4 Price, No. 63ea. \$1.15 1.30

No. 1263 Bronze Ground **Key Gasoline Cocks**

Spring Key Type, Lock Washer Rough Body, Lever Handle

Three way female pipe threaded ends.

Size ... in. ½ ½ Price, No. 1263 ... ea. \$3.00 4.50



No. 1039 Bronze Ground **Key Gasoline Cocks**

Spring Key Type, Lock Washer Rough Body, Lever Handle

Male pipe threaded end.

Size.....in. Price, No. 1039..ea. \$1.15 1.30

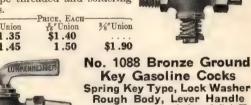
EUNKENBEIMET

No. 172 Bronze Ground **Key Gasoline Cocks** Spring Key Type, Lock Washer Rough Body, Lever Handle

Male pipe threaded and soldering

union ends. Price, Each-5"Union \$1.40 Size In. "Union 3/8" Union







Gas Hose Cocks



I.P.	Price	I.P.	Price
Connection	per	Connection	per
Inches	Dozen	Inches	Dozen
3/4	\$8.00	1/4	\$4.55
1/2	5.25	1/2	4.25
14		/0	
3/8	4.90		

Tee Handle Air Cocks

Male	Both	Ends

Size	Price	Size	Price
In.	Each	In.	Each
1/8	\$.55	3/8	\$.75
1/4	.65	1/2	.90





Tee Handle Air Cocks

Male and Female Ends

Price Each \$.75	Sine In. 3/8 1/2	Price Each \$.90
	Each \$.75	Each In. \$.75 3/8



Tee Handle Gauge Cocks

Female Both Ends

Size Inches	Price Each	Size Inches	Price Each
1/8	\$.65	3/8	\$.85
Tee	.70 Handle	Air Co	1.10 ocks



Straight Nose

Size Inches	Price Each	Size Inches	Price Each
1/8	\$.40	1/2	\$.60
3/8	. 45	1 3/4	.90 1.25

Tee Handle Air Cocks

Bibb Nose

Size Inches	Price Each	Size Inches	Price Each
1/8	\$.70	3/8	\$.90
Can	4	7/2 with	threaded

Prices upon application.

nose.

Lever Handle Air Cocks



	Stra	ight	Nos	9	
Size Inches	Price		Size		Price
1/4	Each \$.55		Inche	3	Each
1/4	. 60		3/4		\$.75 1.15
3/8	OF.		1		4
Size	3/8-inch	and o	over	have	hexa-

gon shank.

Lever Handle Air Cocks

Bibb Nose

Size	Price	Size	Price
Inches	Each	Inches	Each
1/2	\$.85	3/9	\$1.0
1/4	. 95	1/2	1.15
/4		72	4.1.

nose. Prices upon application.

Can be furnished with threaded

Lever Handle Air Cocks

Male Both Ends

Size	Price	Size	Price
Inches	Each	Inches	Each
1/8	\$.70	3/8	\$.90
	.80	1/2	1.05



Lever Handle Air Cocks

Male and Female Ends

Bire	Price	Size	Price
In.	Each	In.	Each
1/8	\$.90	3/8	\$1.05
1/4	.95	1/2	1.30



Lever Handle Air Cocks

Female Both Ends

Size	Price	Size	Price
Inches	Each	Inches	Each
1/8	\$.80	3/8	\$1.00
1/4	.85	1/2	1.25

Bronze Ground Key Cocks

Spring Key Type, All Finished, Male End



No. 177, Tee Handle

Adapted for air, gas, oils and other liquids.

	PRICE,			PRICE,	EACH-
Size	No. 177 Tee	No. 178 Lever	Size	No. 177	No. 178
Inches	Handle	Handle	Inches	Tee Handle	Handle
1/8	\$.65	\$.70	3/8	\$1.00	\$1.15
1/8 1/4	.75	.90	1/2	1.30	T
7.4			72	1.30	1.55



No. 176 Bronze Ground **Key Cocks**

Spring Key Type, Lever Handle Male End, Bibb Nose

Size	No. 176	Size	No. 176
Inches	Price, Ea.	Inches	Price, Ea.
1/8	\$.90 1.00	3/8	\$1.50

No. 174 Bronze Ground Key Cocks



Spring Key Type, Lever Handle

Male Both Ends Adapted for air, gas, oils, and

Size	No. 174	Sise	No. 174
Inches	Price. Ea.	Inches	Price, Ea.
1/8	\$.85	3/8	\$1.50
1/4	1.10	1/2	2.00

No. 1038 Bronze Ground Key Cocks

Spring Key Type, Lever Handle Male and Female Ends

Adapted for air, gas, oils, and other liquide

004404	and drawn.		
Size Inches	No. 1038 Price, Ea.	Size Inches	No. 1038 Price, Ea.
220200	A 1100; 1200.	THURS	rrice, ra.
1/8	\$.90	3/8 1/2	\$1.55
1/4	1.15	1/2	2.10



No. 1037 Bronze Ground Key Cocks

Spring Key Type, Lever Handle Female Both Ends

Adapted for air, gas, oils, and other liquida

and concerns			
Size	No. 1037	Size	No. 1037
Inches	Price, Ea.	Inches	Price, Ea.
1/8	\$.90	3/2	\$1.55
1/8 1/4	1.15	3/8 1/2	2.10
4 °E		12	~ .10

Brass Gas Service Stops Flat, Square and Tee Head





Flat Head

Square Head

		PRICE.	EACH-			PRICE	s. Each
Size	Flat	Square		Tee Handle	Size	Flat	Square
In.	Head	Head	Handle	With Check	In.	Head	Head
1/4	\$.90	\$.90	\$.90	\$1.05	1	\$2.10	\$2.10
3/8	1.00	1.00	1.00	1.15	11/4	3.25	3.25
1/4 3/8 1/2 3/4	1.10	1.10	1.10	1.30	11/2	4.60	4.60
3/4	1.30	1.30	1.30	1.55	2	8.00	8.00
\mathbf{F}	lat head	furnished	unless	otherwise	ordere	d.	

No. 4501B Brass Gas Service Stops

	Tee	Head	without	Check	-
Size In.	PRICE, Std.	EACH	Size	PRICE,	EACH
1/2	\$.90	Ex. Hy. \$1.10	In. 11/4	Std. \$3.25	Ex. Hy. \$4.50
1/4	.90	1.10	11/2	4.60	6.50
3/8	1.00	1.20	2'-	8.00	11.20
1/2	1.10	1.30	21/2	17.50	24.50
1 %	1.30	1.80	3	27.00	37.80
	2.10	0.00			

Brass Gas Service Stops with Lock Standard Flat and Round Way





	PRICE.	EACH		PRICE,	EACH-
Size	Flat	Round	Size	Flat	Round
Inches	Way	Way	Inches	Way	Way
1/4	\$1.20		1	\$2.50	\$3.70
3/8	1.30	\$1.70	11/4	3.85	5.50
1/4 3/8 1/2 3/4	1.40	1.90	11/2	5.35	8.10
3/4	1.60	2.30	2	9.00	14.40



No. 298 Brass Gas Stove Cocks

With Check-Lever Handle

Size Inches	Price Each	Size Inches	Price Each
1/4	\$1.15	3/4	\$2.15
3/8	1.25	1	3.25
1/2	1.35		

Brass Gas Meter Cocks





No. 280 Flat Head without Union End

No. 288 Flat Head with Union End

Price,	No.	280,	Size,	8/4	Inch	 	 				each	\$1.30	1
44	66	288	u	3/4	- 46	 	 : .	 		 	- 66	2.35	

Brass Steam Cocks Flat and Square Head For 100 Pounds Steam Working Pressure

		Flat	Sq. Head	
	Size	or Sq.	With	
0.5	In.	Head	Check	
	3/4	\$.85	* * * *	
	1/8	1.00	e1 40	
	3/2	1.25	\$1.40	
	7/4	2.35	1.90 2.55	
	11/	3.70	3.95	
	11/4	4.85	5.15	
	2	7.30	7.65	
		14.50	7.00	
	2 ¹ / ₂	22.50		
Flat Head	*31/2	38.50		Square Head
	*4	50.00		

*Furnished to order only at special prices. Square head furnished unless otherwise ordered.

Three-way Brass Steam Cocks Square Head—With Check For 100 Pounds Steam Working Pressure

With Extra Large Plug and

Size	Price	Size	Price	Size	Price	
In.	Each	In.	Each	In.	Each	
1/4	\$1.80 2.10 2.50	1	\$3.75	21/2	\$18.75	
3/8	2.10	11/4	5.75	3	26.00	
$1/_{2}$	2.50	11/2	7.15			
4 7	2 00 :	0	11 00			

Full Openings

Four-way	Brass	Steam	Cooks
		With Ch	
For 100 Pound	ds Steam	Working	Pressure

	The	ese cocks	are furni	shed to order	only.	
8	ise	Price	Six		Size	Price .
I	n.	Each	In	a. Each	In.	Each
1	n. /2	\$6.00	1	\$11.00	11/2	\$17.50
3	7.	8.50	11	4 14.50	2′*	25.00

Blue Gates Lock and Non-Lock Type

First quality gray iron, cast brass slide. Blue enamel finish.

Packed 6 in a box, ½ to 2-inch inclusive, 3-inch bulk.





Size	Wt., Lbs.		THREAD	PIPE '	THREAD
Inches	Per Dozen	No.	Per Dozen	No.	Per Dozen
$\frac{1}{2}$ $\frac{3}{4}$	13			3123	\$16.50
3/4	$14\frac{1}{2}$			3124	17.00
1	20	3118	\$17.60	3125	17.60
11/4	251/2	3119	20.35	3126	20.35
11/2	34	3120	24.20	3127	24.20
2	54	3121	33.00	3128	33.00
3	90	3122	55.00	3129	55.00

Lunkenheimer Bronze Air Nozzles



No. 26, Female Pipe Threaded No. 32, Female Pipe Threaded End with Push Button End with Lever

These air nozzles are time savers and safety-first devices of highest grade. They facilitate quick and positive removal



of dust, chips, dirt, liquid deposits, etc., and insure operatives of complicated machines against accident. Their use

No. 96, Hose End with Push Button

eliminates the un sanitary hand rag, reduces the waste expense, and dispenses with the time-consuming hand bellows.

The push button type outlets measure 54-inch inside diameter.

The lever type outlets measure $\frac{5}{32}$ -inch inside diameter.

These patterns with outlet nose tubes of any practicable shape, length,



No. 5, Hose End with Lever or inside diameter are procurable on special order.

		PRICE.	EACH-	
	Hose	END-		THREADED ENDS
Size	No. 96 with	No. 5, with	No. 26, with	No. 32, with
Inches	Push Button	Lever	Push Button	Lever
1/8	****		\$1.20	\$1.50
1/4			1.30	1.60
3/8	\$1.10	\$1.40	1.40	1.70
1/2	1.20	1.50	****	

Lunkenheimer Bronze 3 and 4-Way Steam Stop Cocks

Square Head, Female Screw Ends For 150 Pounds Steam Working Pressure



No. 573, 3-Way 3-Port Key



No. 155, 4-Way 4-Port Key



Sectional View of 3-Way Pattern with 2-Port Key



Sectional View of 3-Way Pattern with 3-Port Key



Sectional View of 4-Way

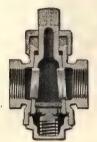
Position of ports through keys is indicated on top of square head.

Malleable iron lever fitted to the square head key is procurable upon special order.

		Ozor	021		
Size	Pric	E, EACH	Size	PRICE, F	CACIET
Inches	No. 573	No. 155	Inches	No. 573	No. 155
1/4	\$2.00	\$4.00	1	\$4.30	\$8.70
3/8	2.20	4.40	11/4	6.10	
1/4 3/8 1/2 3/4	2.50	5.10	$\frac{11/4}{11/2}$	11.50	
3/4	3.00	6.00	2	16 00	
Pri	ces of No.	573. 3-way r	attern with 2	-nort korr	and Ma
155, 4	-way with	3-port or 2-r	ort key upon	application	ind No.
, .		o born or m.	Jore Rey upon	appueation	1.

No. 805 Lunkenheimer Bronze Straightway Packed Key Stop Cocks

> Square Head, Female Screw Ends For 150 Pounds Steam Working Pressure



For service where it is desirable to provide against the leakage to atmosphere incident to the eventual wearing of the bearing between the key and body.

They are provided with an independent key adjustment permitting setting up of the keys to suit varying conditions of service and wear.

Malleable iron lever fitted can be furnished upon special order.

Size	No. 805	Size	No. 805
In.	Price, Ea	In.	Price, Ea
1/2	\$3.15	11/4	\$7.60
$\frac{1}{2}$ $\frac{3}{4}$	4.10	11/2	11.00
1	5.15	2 ~	14.00

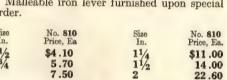
No. 810 Lunkenheimer Bronze Straightway Packed Key Stop Cocks

Square Head, Female Screw Ends

For 250 Pounds Steam Working Pressure

The heavy bolt with friction plate accurately centered at the bottom of key, permits of proper adjustment of the key to suit varying service requirements.

Malleable iron lever furnished upon special order.





No. 817 Lunkenheimer Bronze Three Way Packed Key Stop Cocks

Square Head, Female Screw Ends

For Steam Working Pressures: 11/2 Inches and Smaller, 250 Pounds; 2 Inches, 200 Pounds



Position of key ports is indicated by lines on top of key.

Malleable iron lever furnished upon special order.

Size	37- 017 -	CI*	37
	No. 817	Size	No. 817
In.	Price, Ea.	In.	Price, Ea.
1/2 3/4	\$5.70	11/4	\$18.00
3/4	8.60	11/2	23.50
1	13.25	2	38.00

No. 278 Lunkenheimer Bronze Four Way Packed Key Stop Cocks

Square Head, Female Screw Ends

For Steam Working Pressures: 11/2 Inches and Smaller, 250 Pounds; 2 inches, 200 Pounds

Position of key ports is indicated by lines on top of key.

Malleable iron lever can be furnished upon special order.

Size In.		No. 278 Price, Ea	Size In.	No. 278 Price, Ea.
1/2 3/4	•	\$8.00 11.50	$\frac{11/4}{11/2}$	\$23 .00 30 .00
1		15.00	2	55.00



Pressure Gauges

Single Spring



The standard type of gauge for steam, water, air, gas or any pressure medium which will not deteriorate brass.

For any standard graduation up to 500 pounds and at extra charge for higher pressures up to 1000 pounds.

Should be graduated to double the actual working pressure.

Unless otherwise specified, gauges will be furnished: sizes 2 and 2½-inch with 1/8-inch male bottom connection;

160

180

other sizes, 4-inch male bottom connection. No extra charge for back connection.

Prices include a T-handle cock for sizes $3\frac{1}{2}$ to 6-inch inclusive; a small union cock for sizes $6\frac{3}{4}$ to 10-inch, and a large union cock for sizes 12-inch and larger.

			PRICE.	EACH-		
Size	E		,		DEEP CA	se, O. G.
Dial	IRON	CASE-	Brass	N. P.	OR OCT	
In.	Brass Ring	N. P. Ring	Case	Case	Brass	N. P.
16	\$90.00	\$92.00	\$125.00	\$135.00		
12	50.00	51.50	75.00	79.00	\$80.00	\$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
81/2	22.00	22.75	30.00	32.50	33.50	36.00
63/4	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
51/2	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
41/2	8.00	8.20	10.00	11.00	11.50	12.50
31/2	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
21/2	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

Pressure Gauges Double Spring

Especially designed and recommended for marine or portable work, or any service where there is excessive vibration or rapid fluctuation in pressures.

For any standard graduation up to 500 pounds and at extra charge for higher pressures up to 1000 pounds.

Should be graduated to double the actual working pressure.

Non-corrosive movement with cast hard bronze, extra wide, heavy machine cut gearing.

Sensitive, rigid, non-vibrating, non-freezing springs of solid drawn seamless tube.

One piece of solid drawn seamless tubing, hand rolled and shaped, passed through and held securely by the socket block, makes the non-freezing double springs. They are rigid, sensitive, uniform in dimension and travel, short, non-vibrating and self-draining.

ing and self-draining.

Prices include a T-handle cock for sizes 4½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for sizes 12 inch and larger.

100-BC	CASACIA CO.			0.		
			PRICE,	EACH -		
Size	_					ASE, O. G.
Dial		CASE-	Brass	N. P.		T. RING
In.	Brass Ring	N.P.Ring	Case	Case	Brass	N. P.
16	\$105.00	\$107.00	\$140.00	\$150.00		
12	55.00	56.50	80.00	84.00	\$85.00	\$89.00
10	37.00	38.00	45.00	48.00	49.00	52.00
81/2	25.00	25.75	34.00	36.50	37.50	40.00
63/4	18.00	18. 0	22.00	24.00	25.00	27.00
6	15.00	15.50	18.00	19.50	20.75	22.25
$5\frac{1}{2}$	12.00	12.25	14.00	15.25	16.25	17.50
5	11.00	11.20	13.00	14.00	15.00	16.00
41/2	10.00	10.20	12.00	13.00	13.75	14.75

Vacuum Gauges Single Spring



For the indication of va-

These gauges are graduated from an open mercury column and are warranted to be perfectly accurate.

Hand-made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested. Guaranteed for long and continued accurate service.

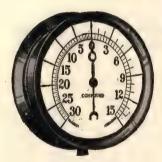
Unless otherwise specified, gauges will be furnished, sizes 2 and 2½-inch with ½-inch male bottom connection; other sizes, ¼-inch male bottom connection. No extra charge for back connection.

Prices include a T-handle cock for sizes $3\frac{1}{2}$ to 6 inches inclusive; a small union cock for sizes $6\frac{3}{4}$ to 10 inches, and a large union cock for sizes 12-inch and larger.

			PRICE.	EACH-		
Size		_			DEEP CAL	
Dial		CASE-	Brass	N. P.	OR OCT,	N. P.
In.	Brass Ring	N. P. Ring	Ca.86	Case	Brass	M. F.
16	\$90.00	\$92.00	\$125.00	\$135.00		11111
12	50.00	51.50	75.00	79.00	\$80.00	84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
81/2	22.00	22.75	30.00	32.50	33.50	36.00
63/4	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
$5\frac{1}{2}$	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
41/2	8.00	8.20	10.00	11.00	11.50	12.50
31/2	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
21/2	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

Compound Pressure and Vacuum Gauges

Single Spring



For use where either pressure or vacuum is to be indicated.

Standard graduation is 15 pounds pressure and 30 inches vacuum. Can be furnished for pressures up to 500 pounds.

Hand made spring of solid drawn seamless tube. Noncorrosive metal movement with machine cut gearing.

Unless otherwise specified, sizes 2 and 2½-inch furnished with ½-inch male bottom connection; other sizes

¼-inch male bottom connection. Back connection optional. Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for 12 inches.

			PRICE,	EACH		
Size						SE, O. G.
Dial	IRON		Brass	N. P.		r. Ring
In.	Brass Ring	N. P. Ring	Саве	Case	Brass	N. P.
12	\$60.00	\$61.50	\$80.00	\$84.00	\$85.00	\$89.00
10	40.00	41.00	50.00	53.00	54.00	57.00
81/2	30.00	30.75	40.00	42.50	43.50	46.00
$\frac{8^{1/2}}{6^{3/4}}$	20.00	20.60	25.00	27.00	28.00	30.00
6	16.00	16.50	20.00	21.50	23.00	24.50
51/2	14.00	14.25	16.00	17.25	18.50	19.75
5	14.00	14.25	16.00	17.25	18.50	19.75
41/2		12.20	14.00	15.00	16.00	17.00
$3^{1/2}$	10.00	10.18	12.00	12.75	13.75	14.50
3 '	9.00	9.15	11.00	11.60	12.25	12.75
21/2	9.00	9.15	11.00	11.60	12.25	12.75
2'	9.00	9.15	11.00	11.60	12.25	12.75

Altitude Gauges

Single Spring

The black hand indicates the height of water. The red hand is independent from the gauge tube and set by the user at the proper altitude to be maintained.

Standard graduation is 70 feet. Can be furnished for any required altitude.

Should be graduated to double the maximum altitude to be registered.

Hand-made spring of solid drawn seamless tube. Non-

corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested.

Unless otherwise specified, gauges will be furnished 1/4-inch male bottom connection. No extra charge for back connection.
This instrument can be supplied with U. S. Navy specifi-

cation case, interior and test.

Prices include a T-handle cock for sizes 3½ to 6 inches

inclusive; a small union cock for sizes 63/4 to 10 inches, and a large union cock for 12 inch.

	PRICE, EACH								
Size	,				DEEP CA	DEEP CASE, O. G.			
Dial	IRON	CASE	Brass	N. P.		T. RING			
In.	Brass Ring	N. P. Ring	Case	Case	Brass	N. P.			
12	\$60.00	\$61.50	\$80.00	\$84.00	\$85.00	\$89.00			
10	40.00	41.00	50.00	53.00	54.00	57.00			
81/2	30.00	30.75	40.00	42.50	43.50	46.00			
$\frac{8^{1/2}}{6^{3/4}}$	20.00	20.60	25.00	27.00	28.00	30.00			
6	16.00	16.50	20.00	21.50	23.00	24.50			
51/2	14.00	14.25	16.00	17.25	18.50	19.75			
5	12.00	12.20	14.00	15.00	16.00	17.00			
41/2	12.00	12.20	14.00	15.00	16.00	17.00			
$\frac{41/2}{31/2}$	10.00	10.18	12.00	12.75	13.75	14.50			

Scotch Gauge Glasses

For 200 Pounds Steam Pressure



			P ₀	ICE, PER D	OWE N		
Lgth			-EXTERN	AL DIAMETE	er. Inches-		
In.	3/2	%	3/4	1/8	1	11/4	11/2
8	\$1.92	\$2.52	\$3.00	\$4.08	\$4.92	\$8.16	\$14.64
9	2.04	2.76	3.36	4.68	5.52	9.24	16.44
10	2.28	3.00	3.60	5.04	6.12	10.20	18.36
11	2.64	3.24	3.96	5.64	6.72	11.16	20.16
12	2.76	3.60	4.32	6.12	7.32	12.24	21.96
13	3.00	3.84	4.80	6.60	7.92	13.20	23.76
14	3.24	4.20	5.16	7.08	8.52	14.28	25.56
15	3.48	4.44	5.52	7.56	9.12	15.24	27.48
16	3.72	4.80	5.88	8.16	9.72	16.32	29.28
17	3.96	5.04	6.24	8.64	10.32	17.28	31.08
18	4.20	5.40	6.60	9.12	10.92	18.36	32.88
19	4.44	5.64	7.08	9.60	11.52	19.32	34.68
20	4.68	6.00	7.44	10.20	12.12	20.28	36.60
21	4.80	6.36	7.80	10.68	12.84	21.36	38.40
22	5.04	6.60	8.16	11.16	13.44	22.44	40.20
23	5.28	6.96	8.52	11.64	14.04	23.40	42.00
24	5.52	7.20	8.88	12.12	14.64	24.36	43.80
30	6.96	9.00	11.16	15.24	18.24	30.60	54.96
36	8.28	10.80	13.44	18.24	21.96	36.72	65.88
42	9.72	12.60	15.72	21.36	25.68	42.84	76.92
48	11.04	14.52	18.00	24.36	29.16	48.96	87.84
54	12.48	16.32	20.28	27.48	33.00	55.08	98.88
60	13.80	18.12	22.56	30.48	36.48	61.20	109.80
66	15.24	20.04	24.84	33.48	40.32	67.32	120.84
72	16.56	21.84	27.12	36.48	43.80	73.44	131.76

Lengths not regular are charged at price of next larger tubes of same diameter.

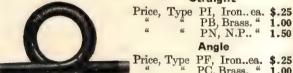
Type G Steam Gauge Hand **Jacks**

This hand jack fits all sizes.

Price, Type G.....each \$4.50

Steam Gauge Siphons

Straight



PF, Iron..e PC, Brass. PP, N.P.. Iron..ea. 1.50

Chesterton Gauge Glass Cutters



Price, Nickel-Plated.....each \$2.00

Gilbert's Self-packing Glass Protectors

Sizeinches . 60 Price per box \$.60

Sizes, ½, 5% and ¾-inch, packed one dozen in box. 1-inch size ½ dozen in a box.

Rubber Gauge Glass Washers



PRICE, PER DOZ Square Round \$.36 \$.48 .36 .36 .60



No. 2011 Square

No. 689 Round

Compression Gauge Cocks



Compression Gauge Cocks with Stuffing Box



No. 979 Bronze Steam Gauge Cocks



Lever Handle Beaded End Pattern Female End and Male Union

No. 979 Siz In. Price, Each \$1.40 1.50 1.60

Lunkenheimer Renewo Extra Heavy **Bronze Weighted Gauge Cocks**

For 300 Pounds Working Steam Pressure



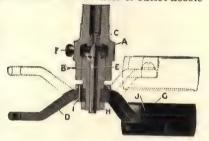
The seat and disc are made of rolled monel metal. The disc is provided with The a slot in the exposed end, facilitating regrinding, should the seating surface become worn. The body hub and lock-nut are of Valve-bronze. The lever is of malleable iron, and

the weight of cast iron. Every part of this gauge is renewable.

Extension chains and brass rings, S-hooks or wood handles are procurable on special order. The long shank pattern, No. 1308, measuring four inches from center of outlet nozzle

to end of shank, is designed for installations in which the gauge cocks are attached directly to the boiler.

Unless otherwise specified, regular shank pattern, No. 1264, measuring 13/4 inches from center of outlet nozzle to end of shank, will be furnished.



Sectional View

Price, No. **1264**, ½ or ¾-Inch Connection...each \$5.00 Price, No. **1308**, ¾-Inch Connection...each **6.00**

Lunkenheimer Bronze Low Water Fuse Alarms

For Steam Boilers





No. 974, Angle Pattern

No. 1111, Straight Pattern

The function of this low water fuse alarm is not only to give prompt warning of a dangerously low water level, but also to prompt warning of a dangerously low water level, but also to permit restoration of proper level without interfering with continuous operation of boiler. This device may be easily installed in any type of boiler and is adapted for any working pressure up to 250 pounds. Fusible discs for this alarm are made of alloys suitable for the following ranges of pressure: from 1 to 10 pounds, from 11 to 30 pounds, from 31 to 50 pounds, from 51 to 100 pounds, from 101 to 150 pounds, from 151 to 200 pounds, from 201 to 250 pounds. Range of pressure is stamped on bronze casing.

PIPE SIZE BOILER	Size Pipe	Ht. from	Center of K	Center of D		PRICE, EACH	Extra
Conn., In. Angle Strt.	H In.	E In.	to Top	to End of K. In.	*No.	†No.	Fusible Discs
1/2 3/4	$\frac{1}{2}$	14	$13\frac{5}{8}$		\$12.50	\$10.00	\$.50

*Angle pattern, with one extra fusible disc. †Straight pattern without internal pipe H, with one extra fusible disc.

No. 0000 Expansion Tank Water Gauges

This gauge is used in connection with hot water systems. Standard finish is rough body with polished trimmings.

It is threaded for ½-inch iron pipe.

Has T handle drip cock.

The glass is protected by two guards. It is 5/8inch by 12 inches.

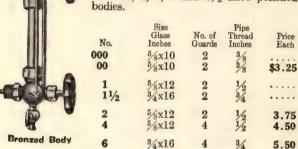


Price, No. 0000each \$2.60

Self-cleaning Water Gauges

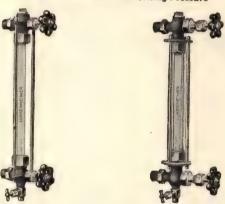
With Iron Wheels

Nos. 000, 1, and $1\frac{1}{2}$ have rough body. Nos. 00, 2, 4, 6 and $6\frac{1}{2}$ have polished



Lunkenheimer Bronze Plain Water Gauges

For 200 Pounds Steam Working Pressure



No. 459, Two Rod

No. 460, Three Rod

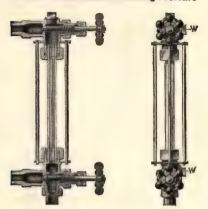
Designed to prevent glass breakage incident to springing of the upper and lower fittings, even at the maximum pressure rating. Equipped with drain valves, of the tee handle, needle valve type, with plain outlet nose and 1/4-inch male inlet.

Orders should specify figure number, sizes of shank and glass, distance between centers of connections, and desired finish. Unless otherwise specified, part finished gauge with iron handwheels and with glass and rods for 18-inch centers will be furnished.

			PRICE,	E a con		
Size	No. 459.	Two Rod	No. 460, T		No. 970, I	Coup Dan
Pipe Size	Part Fin.	All Fin.	Part Fin.		Part Fin.	All Fin.
Connec. Glass	with Iron	with Wood		with Wood		
In. In.	Handwh'l	Handwh'l	Handwh'l		Handwh'l	Handwh'l
2/ 1/						mandwn i
9/8 1/2	\$2.75	\$3.50	\$3.50	\$4.50	\$4.00	\$5.00
$ \begin{array}{ccc} 3/8 & 1/2 \\ 1/2 & 5/8 \\ 3/4 & 3/4 \end{array} $	3.00	3.75	4.00	5.00	4.50	5.50
37 37	6.00					
74 7/4	0.00	8.00	8.00	9.50	8.50	10.00

Lunkenheimer Bronze Water Gauges

Regrinding, Non-automatic For 300 Pounds Steam Working Pressure



Sectional No. 1332. Hand Wheel Control

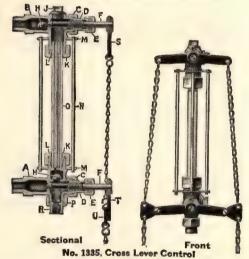
The non-automatic type requires the closing of the shutoff valves in event of glass breakage. Furnished either with handwheels for direct operation of the stop valves, or with cross lever and chain to facilitate operation when the gauge is connected beyond convenient reach,

The seating surfaces of the stop valves can be reground should they become worn. Equipped with glass and rods for centers up to 18 inches and, in the chain operated patterns, sufficient chain to properly connect the cross levers.

Unless otherwise specified, gauges will be furnished part finished and with glass and rods for 18-inch centers. Price, No. 1332, Hand Wheel Control ... each \$20.00

Lunkenheimer Bronze Water Gauges

Regrinding, Automatic For 300 Pounds Steam Working Pressure



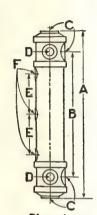
In the automatic type, the inlets to the glass automatically close upon breakage of the glass. The seating surfaces of the stop valves can be reground should they become worn.

Equipped with glass and rods for centers up to 18 inches and, in the chain operated pattern, sufficient chain to properly connect the cross levers. Unless otherwise specified, gauges will be furnished part finished and with glass and rods for 18-inch centers.

Water Columns

For 250 Pounds Steam Working Pressure





Body Complete with Trimmings

D	mens	ions

No.	Lgth. Over All In.	CENTER TO CONNECTION Boiler and Water Gauge		Size C Boiler and End	ONNECTIO Water Gauge	Gauge		Body Only Price Each
1	133/8	10	33/8	1/2	1/2	3/8	2	\$2.75
2	1634	$12\frac{1}{2}$	334	3/4	1,2	1/2	3	4.00
3	187/8	14	41/2	1	3/4	1/2	3	6.00
4	235/8	18	4	11/4	3/4	3/4	3	8.00
77	78	1 1	9					

When ordered complete, trimmings for 175 pounds working pressure will be furnished, unless otherwise specified.

Lunkenheimer Vigilant Iron Body Bronze Mounted Safety Water Columns

For 250 Pounds Steam Working Pressure



The automatic whistle control is simple and positive. When the water falls to an extremely low level, the weight of the float pulls down the lever, which opens the whistle valve. When the level rises sufficiently, the stop engages the lever, and since the lever is double-acting, its motion up or down will open whistle valve.

The stop is adjustable, allowing the whistle alarm for the high level to be set as desired.

All sizes tapped on both sides for gauge cocks, and a set of plugs provided, allowing the Vigilant to be made either right or left-hand by transposing gauge cocks and plugs.

Cast steel water columns furnished on spe-

cial order; prices upon application.

Boiler Connections.—Sizes 4, 5, 7 and 8 have steam connection at top; size 6, at back, 14 inches center to center; size 9, at back, 311/2 inches center to center.

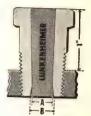
		CENTE			Varia-		
		CENTE	R. IN.	Lgth.	tion		
		Water			between	Perce	. EACH
Size	Size or Type	Gauge (Control			No. 919	No. 1258
No.	of Boilers						
7400	Of DOLLERS	Connec.	COCKS	In.	In.	Screwed	Flanged
4	Horiz. Return Tubu-						
	lar, 34 to 56-in	12	3	301/2	6	\$26.00	
*5	Same, 60 to 84-in	15	4	351/2		28.00	*** * * *
*6	Water Tube	15	4	$35\frac{1}{2}$	8	28.00	
7	u u	18	5	$40\frac{1}{2}$	10	34.00	
8	Vertical	24	$7\frac{1}{2}$	513/8	15	40.00	
9	Stirling Type	20	4	493/8	131/2		\$48.00
				, 0	/ 64		

*Nos. 5 and 6 are identical except that provision has been made for connecting steam pipe at rear of No. 6 column for use with B & W type of water tube boilers.

No. 9 is a flanged column for types F, G, K, L, M, N, 0 & Q Stirling boilers. Flanged columns for other types of

boilers are available on special order.

Lunkenheimer Fusible Plugs



No. 1326 Inside Pattern Regular Standard



No. 1327 **Outside Pattern** Regular Standard



No. 1328 Inside Pattern High Pressure



No. 1329 **Outside Pattern** High Pressure

Lunkenheimer Fusible Plugs have a heat number stamped on each end of the fusible core. This heat number is the mark of approval of the Steamboat Inspection Service, Department of Commerce. Samples of each heat are submitted to the Department for test and approval. No plugs of any heat are re-leased for sale until the Department reports its approval of samples from the heat. Users, therefore, are assured of approved fusible plugs.

Lunkenheimer Fusible Plugs have standard pipe threads. The exceptionally long taper fits not only standard pipe threaded holes, but also holes that have been tapped oversize. Lunkenheimer Fusible Plugs are filled with pure Banca tin.

The regular standard plugs carry the marking R-S, number and heat number. The high pressure plugs carry the marking H-P, number and heat number.

Nos. 1326 and 1327 Regular Standard Patterns with Large Core for Stationary and Portable Boilers for Marine Boilers on River and Harbor Boats

Nos. 1326 and 1327 plugs conform to both the A.S.M.E. code and the Rules and Regulations of Steamboat Inspection Service, Department of Commerce. These plugs are used in land service on stationary and portable boilers. They are also used in marine service and are generally preferred on river and harbor boat boilers.

Nos. 1328 and 1329 High Pressure Patterns with Small Core for Marine Boilers on Ocean and Lake Vessels

Nos. 1328 and 1329 plugs conform to Rules and Regulations of Steamboat Inspection Service, Department of Commerce, which permit the use of plugs having core 1/26 inch diameter at smaller end for pressure exceeding 150 pounds. These high pressure plugs are used in marine service and are generally preferred on ocean and lake vessel boilers.

Dimensions: A, smallest diameter of core R-S pattern; B, diameter flared core, R-S pattern; C, smallest diameter of core, H-P pattern; D, diameter flared core, H-P pattern.

Size		DIMENS	ions, In.			PRICE N	EACH-	
In.	A	В	C	D,	1326	1327	1328	1329
3/8 1/2	3/2	5/16 7/10	14	516	\$1.40	01 70	\$1.40	\$1.50
3/4	1/2	9/6	5/16	3/8	1.60 2.00	\$1.70 2.20	1.60	1.70 2.20
1	1/2	9/18	5/6	3/8	2.75	3.00	2.75	3.00
1½ 1½	1/2	9/16	5/16	3/8	4.25	4.75	4.25	4.75
172	/2	9/16	216	%	6.00	7.00	6.00	7.00

No. 482 Lunkenheimer Senior Bronze Lubricators

Double Connections With Sight Feed and Indicator Glasses



The Senior Lubricator should be connected into the steam pipe above the throttle valve. It permits of close feed regulation.

It is suitable for 200 pounds steam working pressure.

Condenser connections are not furnished unless specified on order.

Finished bronze lubricators are furnished unless otherwise specified.

Complete directions for installing and operating are provided with each lubricator.

Cap. Pts.	I.P. Thread In.	PRICE, Fin. Bronze	N.P. Bronze	Cap. Pts.	I.P. Thread In.	PRICE, Fin. Bronze	N.P. Bronse
1/3 1/2 2/3	3/8 3/8 1/2 1/2	15.00 17.00 20.00 22.00	17.00 19.00 22.50 25.00	1½ 2 4	1/2 1/2 1/2 1/2	\$25.00 28.00 38.00	\$28.50 32.00 43.00

Condenser Connections

Cap. Pts.	I.P Thread In.	PRICE, Fin. Bronze	EACH N.P. Bronze	Cap. Pts.	I.P. Thread In.	Price Fin. Bronse	N.P. Bronze
1/3 1/2 2/3	3/8/3/8/1/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2	6.90 8.00 9.10 10.30	7.60 8.80 10.00 11.30	11/ ₂ 2 4	1/2 1/2 1/2 1/2	\$11.50 12.70 14.50	\$12.60 13.90 16.00

Lunkenheimer Junior Bronze Lubricators Single Connection With Sight Feed

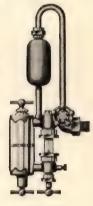
Suitable for 150 pounds steam working pressure and should be connected into the steam pipe above the throttle valve.

No. 486 has Iron Condensing Chamber, Pipes and Hand Wheel.

No. 270 has Bronze Condensing Chamber, Pipes and Wood Hand Wheel.

Part finished lubricator will be furnished unless otherwise specified.

	LP.	Price, Each No. 486
Cap.	Thread	Part
Pts.	In.	Finished
1/4	3/8	\$7.00
1/3	3/8	8.00
1/2	1/2	10.00



Fin. Bronze Price Each

\$4.75

5.25

5.75 6.50

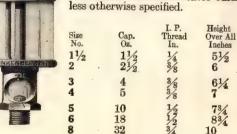
9.00

12.00

25.00

No. 1301 Lunkenheimer **Paragon Lubricators**

For gas, gasoline or oil engine cylinders. Glass body; cast bronze base and top. Equipped with sight feed. Finished bronze lubricator furnished un-



No. 171 Lunkenheimer Premier Bronze Lubricators



For gas, gasoline and oil engine and low pressure air compressor cylinders.

Equipped with sight feed.

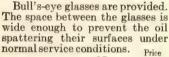
By closing main valve the reservoir may be refilled under service without disturbing feed regulating valve.

Size No.	Capacity Ounces	I. P. Thread Inches	Price Each Finished Bronze
0 2	$\frac{1\frac{1}{2}}{3\frac{1}{2}}$	3/8 1/2	\$5.70 6.70
3	41/2	1/2	7.60 9.50
5	10	$\frac{1}{2}$	10.00

No. 487 Lunkenheimer Major Bronze



With Sight Feed, for Small Steam Engine and Pump Cylinders



			rrice
CH .		I.P.	Each
Size	Cap.	Thread	Finished
No.	Oz.	In.	Bronze
1	$2\frac{3}{4}$	3/8	\$4.00
2	$3\frac{3}{4}$	1/2	5.00
3	5	1/2	6.00
4	6	1/2	8.00
5	10	1/2	10.00
6	18	3/4	12.00

No. 489 Lunkenheimer Banner **Bronze Lubricators**

For air compressor cylinders and blowers.

Equipped with sight feed.

The stop valve controls the main inlet and discharge channel and permits refilling of the oil reservoir under service.

Size No.	Cap. Oz.	I.P. Thread In.	Each Finished Bronse
0	$ \begin{array}{c} 2 \\ 2^{3} & 4 \\ 3^{3} & 4 \end{array} $ $ \begin{array}{c} 5 \\ 6 \\ 10 \\ 18 \end{array} $	3/8	\$4.40
1		3/8	4.60
2		1/2	5.00
3		1/2	6.00
4		1/2	8.00
5		1/2	10.00
6		3/4	12.00



No. 498 Lunkenheimer Bronze Plain Engine Lubricators with Valve

The No. 498 Lubricator is furnished without drain cock or tube.

a.	G	I. P. Thread	Finished Bronze
Size No.	Cap. Oz.	In.	Price, Each
0	1	3/8	\$2.20
1	2	3/8	2.40
2	$2\frac{3}{4}$	1/2	2.60
2	33/4	1/2	2.90
4	5	1/2	3.25
5	6	1/2	3.75
6	10	3/4	4.75
7	18	3/4	7.00
8	28	3/4	10.00

Lunkenheimer Invincible Iron Body Mechanical Oil Pumps



No. 1014 wo Feed Unit

These pumps are designed as a positive lubricating device for cylinders of reciprocating engines and compressors subject to continuous operation over extended periods under high pressures and widely varying loads.

Also, they are used on the highduty internal combustion motors of the Diesel and semi-Diesel types. The thoroughly practical and stable construction of their operating mechanism and the wide range of feed regulation without interference with their definite function, are features which make these devices applicable as absolutely dependable lubricators for almost any type of heavy duty cylinder or high pressure bearing.

The power of the Invincible mechanism is evidenced by the fact that each force pump in each

of the entire range of units is rated to deliver against a pressure of 2000 pounds per square inch.

In all units each delivery feed has its individual sight chamber, feed regulation, measuring and force pumps, and outlet connection to provide easy, quick, independent control of the volume of oil delivered through each discharge line.

All parts subject to wear are of hardened steel and the bronze bearings are of large proportions. The force pump plungers are provided with stuffing boxes of ample size to permit proper packing. The reservoir may be drained through plug RB-2465. Gauge glass indicates the quantity of oil in the reservoir.



Four Feed Unit Showing Accessibility

The filling hole is equipped with a removable strainer and protected by a sliding cover.

To insure an atomized discharge at the point of lubrication, simultaneous with the discharge from the force pump cylinders, the line check valve, No. 1313, should be installed at the extreme outlet end of each oil delivery pipe. When thus installed, a full column of oil is maintained in each delivery pipe.

tained in each delivery pipe.



Regular equipment includes one No. 1313 bronze line check valve for each feed on the pump.

No. 1313 Bronze Line Check Valve

Both No. 1313 and all the outlet connections of the Invincible are tapped for \frac{1}{8}-inch

		PRICE	, Елен	No. 1313 Extra
No.		o. 1014, LEFT HANK		Bronze Line
of Feeds	1	CAPACITY, QUARTS-	4	Check Valve for Delivery Line
1	\$40.00	\$43.00		\$2.00
2		55.00	\$64.00	2.00
3			78.00	2.00
4			93.00	2.00

Lunkenheimer Marvel Bronze Mechanical Oil Pumps

Single Feed

The Marvel functions mechanically only while the prime mover to which it is connected is operating. It not only automatically starts and stops, but also synchronizes with the variable speeds of the prime mover.

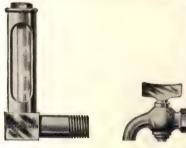
However, the ratio of the strokes of the plunger to the speed of the prime mover can be regulated, as the link may be set in or out on oscillating driving rod to obtain any desired practical degree of revolution of ratchet wheel.



			PRICE,	EACH
	*Mount- ing Connec-	†Delivery Connection and Check	No. 912 with Oil	Extra Bronze Union
Capacity Pints	tion Inches	Valve Inches	Cup, Fin. Bronze	Check Valve
1 2	5/8 5/8	1/8 1/8	\$19.00 24.00	\$1.25 1.25
4	3/4	1/8	31.00	1.25

*Bolt thread. †Pipe thread. ‡For delivery line.

Lunkenheimer Bronze Oil Gauges With Revolvable Shield



No. 528, Plain

No. 529, with Drain Cock

The economical results which self-oiling bearings and open erank cases are intended to effect are most uncertain unless the contents of the oil pocket or reservoir are readily observable.

Lunkenheimer Oil Gauges embody features of unusual practical value. All parts are heavily proportioned. The slotted brass shield facilitates a clear vision of the oil level from any desired angle, and being revolvable, it permits the cleaning of the gauge glass without disassembling. A vent is provided in the cap at top to insure correct registering of the oil level within the glass.

No. 529 is equipped with a cock for draining the oil pocket. Finished bronze oil gauges are supplied unless otherwise specified, and if number is not given No. 529 will be furnished.

		PRICE	EACH -	
Size	No. 528	PLAIN-	No. 529	WITH COCK
In.	Fin. Bronze	N. P. Bronze	Fin. Bronze	N. P. Bronze
1/8	\$.40	. \$.55	\$.80	\$1.00
1/4	. 50	.65	.90	1.10
3/8	. 65	. 80	1.05	1.25
1/2	1.00	1.20	1.40	1.65

No. 853 Lunkenheimer Universal Hand Oil Pumps

A plain push plunger type pump. The interchangeability of shank A and plug B permits of their transposition and installation of the Universal for either vertical or horizontal discharge. Has glass body, bronze base and top. The all finished pump with glass body will be furnished unless otherwise specified.



No. 495 Lunkenheimer Alpha Oil Pumps

The No. 495 Alpha Glass Body Oil Pump is intended to be used in connection with sight feed lubricators on stationary or marine engines.

Has bronze base and top.

Size No.	I. P. Thread In.	Cap. Pints	Price Each Bronze Fin.
3 5	3/8	1/8	\$7.50
	3/8	1/2	8.50
6	1/2	1	10.00
8	1/2	2	15.00

No. 494 Lunkenheimer Bronze Independent Sight-feeds

These sight-feeds are applicable in installations where the oil is supplied to a series of engines from a tank centrally located.

Waste of oil due to filling

Waste of oil due to filling of a number of individual cups is eliminated and time thereby saved.

The male outlet shank is threaded for \(^3\grace{8}\)-inch pipe, and inlet female union for \(^1\square\)-inch pipe thread.

Price, No. 494, Fin. Bronze..each \$6.00 Price, No. 494, N. P. Bronze.....each 7.00



Lunkenheimer Oil Cup Glasses and Washers

For lubricators, oil cups, oiling devices, etc. Glasses cylindrical in shape, clear, strong and uniform in size. Interchangeable with all styles of cups.

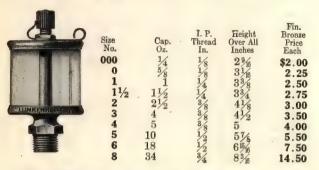


No. 1062

			No. 526	No. 1062	2			No. 526	No. 1062
a: .	0.0	FTA	Glasses	Washers				Glasses	Washers
Size	0, D.	Ht.	Price	Price	Size	O. D.	Ht.	Price	Price
No.	In.	in.	Each	per Doz.	No.	In.	In.	Each	per Doz.
000	1	7/8	\$.40	\$.45	3	$2\frac{1}{4}$	21/8	\$1.00	\$1.30
00	11/8	1	.50	.50	4	$2\frac{1}{2}$	23/8	1.10	1.40
0	$1\frac{1}{4}$	11/8	. 60	.60	5	3	3	1.30	1.70
1	$1\frac{1}{2}$	$1\frac{3}{8}$.70	.80	6	$3\frac{1}{2}$	4	1.90	2.10
11/		15/8	.80	1.00	8	$4\frac{1}{4}$	5	4.30	3.50
2	2	17/8	.90	1.20	10	$5\frac{1}{2}$	7	6.00	5.00

No. 1297 Lunkenheimer Pioneer Oil Cups

Recommended for use on stationary bearings. Equipped with needle valve feed control.



No. 1298 Lunkenheimer Royal Oil Cups

Recommended for use on stationary bearing. Equipped with needle valve feed control.

Size No.	Cap.	I. P. Thread In.	Height Over All Inches	Fin. Bronze Price Each
000	$\frac{1}{5}$ $\frac{1}{1}$ $\frac{1}{2}$	1/8	31/6	\$2.50
0		1/8	37/8	2.75
1		1/4	43/6	3.00
1 ¹ / ₂		1/4	47/6	3.25
1½ 2 3 4 5	$ \begin{array}{c} 2^{1/2} \\ 4 \\ 5 \\ 10 \end{array} $	3/8 3/8 3/8 1/6	5 5 ¹ / ₄ 5 ⁸ / ₄ 6 ⁸ / ₄	3.50 4.00 4.75 6.25
6	18	1/2	734	8.25
	34	3/4	813/15	15.50



No. 1299 Lunkenheimer Cardinal Oil Cups

With Snap Lever Feed Control Cast Bronze Base and Top

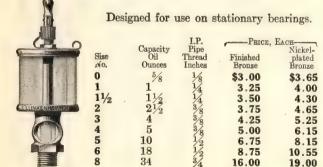
Designed for use on stationary bearings.

Size No. 0 1 1 ¹ / ₂	Cap. Oa. 5/8 1 11/2	I. P. Thread In. 1/8	Height Over All Inches 3 ¹⁵ / ₁₆ 4 ¹ / ₄ 4 ⁵ / ₈	Fin. Bronze Price Each \$2.50 2.75 3.00
2 3 4	$\frac{2\frac{1}{2}}{4}$	3/8 3/8 3/8	$ \begin{array}{c} 5 \\ 5^{3}/8 \\ 6^{1}/6 \end{array} $	3.25 3.75 4.25
5 6 8	10 18 34	1/2 1/2 8/4	7 8 ¹ / ₁₆ 9 ¹ / ₄	6.00 8.00 15.00



No. 1300 Lunkenheimer Sentinel Oil Cups

With Snap Lever Feed Control



Lunkenheimer Bronze Plain Oil Cups With or without Wick Tube









No. 540 Small Base

No. 541 Large Base

No. 542 with Lever Handle Cock

No. 915 Elbow Shank

These cups are not furnished with internal tube for wick unless so specified. Prices with tube do not include wicking. Wicking is omitted as users usually find it convenient to provide wicks of wool, cotton, or other material best suited to the service requirements.

				FINISHED-PRICE, EACH					
						No. 542			,
		I. P.	O. D.	No. 540	No. 541	with	37	ADE	FOR
Size	Cap.	Thread		Small	Large	Lever Handle	No. 915	*Wick	Nickel-
No.	Oz.	In.	In.	Base	Base	Cock	Elbow Shank	Tube	plating
00								Each	Each
	1/10		11/16	\$.25	\$.30	\$.85	\$.55	\$.10	\$.10
0	2/10		216	. 30	. 35	. 90	. 65	. 10	. 10
1 2	3/10	1/8	13/16 7/8	. 35	. 40	1.00	. 75	. 10	. 10
2	5/10	1/4	11/6	. 40	. 50	1.10	. 85	. 10	. 10
		/ 18	-/ 83			2.20	. 00	. 10	. 10
3	8/10	1/4	11/4	. 60	. 75	1.60	1.00	.15	10
4	11/4	3/8	11/2	. 90	1.00	2.20			. 10
5		38	15/				1.40	. 15	. 15
	13/4	3/8	15/8	1.25		2.75		. 15	. 15
6	$2\frac{1}{2}$	3/8	113/6	1.60		3.00		. 15	.15
-	01/								
7	$3\frac{1}{2}$	1/2	2	1.75		3.25		. 15	. 20
8	41/2	1/2	$2\frac{3}{6}$	2.25				. 20	.20
9	$6\frac{1}{2}$	1/2	276	2.75				.20	
_	-/2	14	-/m	2.10			* * * *	. 20	. 20
SETT	N.T.	F 40	- 4						

*For Nos. 540 and 541 only.

Lunkenheimer Bronze Hinge Lid Oil Cups

With or Without Wick Tube



These cups are not furnished with internal tube for wick unless specified with tube.

Prices on cups with tube do not include wicking. Wicking is omitted as users usually find it convenient to provide wicks of wool, cotton, or other material best suited to the service requirements.

Size No. 1 2	Cap. Oz. 8/10 5/10 8/10	I. P. Thread Inches	Finis No. 538 Small Base \$.70 .85 1.20	No. 539 Large Base \$.70 .85 1.20	No. 971 Elbow Shank \$.85 1.15 1.60	Add for Wick Tube Each \$.10
4 5 6 7	$1\frac{1}{4}$ $1\frac{3}{4}$ $2\frac{1}{2}$ $3\frac{1}{2}$	3/8 3/8 3/8 1/2	1.60 2.10 2.50 2.70	1.60	2.10	.15 .15 .15

No. 591 Lunkenheimer Bronze Champion Oil Cups



Has glass sides and enclosed needle valve feed control.

Used for engine crank pins and other bearings having a rotary

Size No. 1	$\begin{array}{c} {\rm Cap.} \\ {\rm Oz.} \\ 1\frac{1}{4} \\ 2\frac{1}{2} \end{array}$	I. P. Thread Inches	Price Each Fin. Bronge \$1.40 2.00
$\frac{3}{3^{1/2}}$	5 8	$\frac{1}{2}$ $\frac{1}{2}$	2.60 3.50

No. 537 Lunkenheimer Pulley Oilers



The feed is regulated by the screw in the shank.

Shanks on sizes Nos. 0, 1 and 2 are regularly provided with a tapered thread (%-inch o.d. at point, 16 threads to the inch), to permit a tight fit into a %-inch bolt hole. Shanks on sizes Nos. 3 and 4 have 1/4-inch male pipe thread.

Size	Cap.	Rough Price	Size	Cap.	Rough Price
Size In.	On.	Each	In.	Oz.	Each
0	1/4	\$.25	3	11/4	\$.50
1	1/2	.30	4	13/4	. 65
2	3/4	.40	a		

No. 613 Lunkenheimer Steel Body Needle Valve Priming Cups

Brass Stem, Hexagon Top, Lever Handle



These cups have seats of the direct compression needle type.

The brass rod stems are of proper diameter and are supported by long threaded

The cup capacity is not stinted.

The ports are direct and easily cleaned

Pipe Thread Inches	Center to End of Lever Handle Inches	Height Over All Inches	Price Each
1/8	7/8	17/6	\$.60

No. 820 Lunkenheimer Bronze Combined Priming Cup and Relief Cock Lever Handle, for Gasoline Engines



Size No.	Pipe Thread Inches	Price Each	Size No.	Pipe Thread Inches	Price Each
00	1/8	\$.75	2	1/4	\$1.10
0	1/8	. 85	3	1/4	1.40
1	1/8	. 95	4	3/2	1.65

No. 533 Lunkenheimer Shaft Oilers

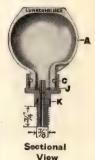
For use on shaft bearings. Feed is regulated by means of screw in shank.



The shank is threaded %-inch on end, 16 threads to the inch. Thread is slightly tapered, enabling same to be tightly screwed into 3/8-inch bolt hole.

Made of finished brass.

279	-				
3/8	Size No.	Cap.	O.D. Glass In,	Height Over All In.	Price Each
xterior	1	1	13/4	31/2	\$1.70
View	2	. 2	2	313/16	1.70
	3	4	$2\frac{1}{2}$	43/8	1.70



No. 534 Lunkenheimer Shaft Oilers

With Loose Wire and Wood Plug

For use on shaft bearings. It is provided with a tapered wood shank which can be wedged in a %-inch bolt hole and permits of rapid attaching or removal for filling.

The loose wire which extends below and up through the wood shank, rests upon the shaft which when revolving causes the wire to vibrate and create a flow of oil.

Size No.	Capacity Ounces	O. D. Glass Inches	Ht. Over All Inches	Fin. Price. Each
1	1	13/4	31/2	\$1.60
2	2	2	313/16	1.60
3	4	$2\frac{1}{2}$	43/8	1.60



Lunkenheimer Bottle or Shaft Oilers

Straight Blank Shank

Loose Wire Feed







No. 1584, Globe Body **Exterior View** Sectional View

Exterior View

No. 1585 is a flat side body oiler and is convenient where

space does not permit the use of the full globe body.

Nos. 1584 and 1585 have a blank metal shank 330 inch in diameter, 1/8 inch long, which slips into bearing oil hole. Should the oil hole in the bearing be too large, it may be tapped to receive a ¼-inch standard pipe size nipple, the inside diameter of which is of correct size to receive oiler shank.

Large oil holes may also be filled with lead or babbitt metal, or where bearings are provided with a grease pocket, a wooden block may be driven into the pocket and drilled 1/32-inch diameter for receiving shank of oiler.

No	1584	1585
Sizenumber	3	3
Capacity (Oil)ounces	4	4
Diameter Globe Bodyinches	21/2	
Radius, Flat Side " " Center to Flat Side "	-/2	15/c
Center to Flat Side		$\frac{15}{16}$
Height, Bottom of Shank to Top of Glass		/4
inches	4	41/6
Priceeach	\$1.50	4½ 1.50

No. 511 Lunkenheimer Brass Jewel Grease Cups



Automatic Feed

For service not demanding the employment of heavy greases and for installations requiring an automatic cup of the lightest practicable proportions. A cup shorter over all and lighter in weight than the automatic feed cast bronze patterns of similar capacity.

		I, P.		*Height	PRICE.	EACH
Size	Cap.	Thread	O. D.	Over All	Fin.	N. P.
No.	Oz.	In.	In.	In.	Bronze	Bronze
00	1/3	1/8	13/8	3	\$.80	\$1.00
0	1	1/4	$1\frac{3}{4}$	3%	1.00	1.30
1	$1\frac{1}{2}$	1/4	21/6	41/6	1.30	1.70
2	3	3/8	$2\frac{1}{2}$	$5\frac{1}{4}$	1.70	2.20
3	6	1/2	31/8	696	2.30	2.90
4	10	1/2	311/6	75/8	3.20	3.90
*]	Plunge	r rais	ed.			

No. 512 Lunkenheimer Marine Screw Feed Grease Cups

Designed more particularly for marine engines. However, it is also found suitable for other purposes where screw feed is desired, or where it is found necessary to force grease some distance to the parts to be lubricated. Thread is on plunger, instead of on stem, lessening leakage around

plu	nger.				Price	e, Each
Size	O.D.	Ht.	Thd.	Cap.	Fin.	N. P.
No.	In.	In.	In.	Os.	Bronze	Bronse
00	13/8	33/8	1/8	1/3	\$1.00	\$1.20
0	13/4	45/6	1/4	1	1.20	1.45
1	2	$4\frac{7}{8}$	1/4	$1\frac{1}{2}$	1.60	1.90
2	25/8	515/16	3/8	3	2.00	2.40
3	33/6	71/6	1/2	6	2.80	3.40
4	35/8	81/8	1/2	10	4.00	4.75
5	456	10	3/4	18	7.00	8.20



No. 510 Lunkenheimer Ideal Automatic Feed Grease Cups



An excellent cup for use on engine crank pins, journals, etc. It is provided with a leather packed plunger which is easily raised when cup requires recharging with grease. Spring and plunger are controlled by a thumb nut, which has an automatic lock arrangement.

uu	Omanic	TOOK	CALL CALL	Rement	/ m	977
Size No.	O.D. In.	Ht. In.	Thd.	Cap.	Fin.	EACH N. P.
00	13%	31/4	1/6	1/6	S1.50	Bronze \$1.75
0	$1\frac{3}{4}$	43/8	1/4	1	2.00	2.25
1	2	415/16	1/4	$1\frac{1}{2}$	2.50	2.80
2	25/8	616	3/8	3	3.20	3.60
3	$\frac{3\frac{3}{16}}{3\frac{5}{8}}$	73/6	12	6 10	4.30	5.00 6.75
5	45/8	101/8	3/4	18	12.50	13.80

No. 669 Lunkenheimer Apollo Iron Grease Cups Automatic Feed

For service where the finish of the article is unimportant, such as on shaft bearings, pulleys, etc. It will feed in any position. The threaded shank consists of an extra heavy renewable pipe nipple inserted in base of cup.

Size No.	Cap.	I. P. Thread In.	Ht. In.	Price Each
00	1/3	1/8	33/4	\$1.30
0	2/3	1/4	49/6	1.40
1	$\frac{1}{2}\frac{1}{2}$	1/4	5	1.50
2	3 6	1/3	73/	1.70 2.30
4	10	$\frac{1}{2}$	87/8	3.20





No. 24 Lunkenheimer Guard Brass Ratchet-lock Grease Cups

Cap Screw Feed

Recommended for service where a cup with a pressed brass cap is desired.

Size	Cap.	I. P. Thread	O. D.	Ht.	PRICE, Fin.	N. P.
No.	On.	In.	In.	In.	Brass	Brass
000	1/8	1/8	15/16	21/6	\$.45	\$.60
00	1/2	1/8	13%	25%	. 55	.70
0	2/3	1/4	11/2	296	.70	.85
1	1	1/4	11/16	213/6	. 85	1.05
2	2	3/8	21/4	33%	1.40	1.65



No. 556 Lunkenheimer Gem Brass Plain Base Grease Cups

Cap Screw Feed

Designed for service where an exceptionally well-made brass grease cup of plain design is demanded; it is recommended for any installation where bearings are not subject to unusual vibration.

	I. P.			PRICE, EACH			
Size No.	Cap. Oz.	Thread In.	Ht In.	Rough Brass	Finished Brass		
00 00 000	1/8 1/2 2/3	1/8 1/8 1/4	$\frac{13}{8}$ $\frac{11}{2}$ $\frac{13}{6}$	\$.56 .74	\$.50 .70 .90		
1 2	1 2	14 3/8	$\frac{2^{\frac{1}{16}}}{2^{\frac{5}{16}}}$. 96 1.28	1.15 1.50		
3 4	$\frac{31}{2}$	$\frac{1}{2}$	$\frac{2\sqrt[3]{4}}{3}$		2.15 3.30		

No. 513 Lunkenheimer Tiger Bronze Packed

Base Grease Cups

Cap Screw Feed

A simple, compact, efficient cup of the plain compression type. The base construction includes a renewable leather washer, which insures an effective seal against leakage around the threads, even when feeding the lighter grades of



		I. P.]	BICE, EACH	
Size No.	Cap. Oz.	Thread In.	O. D. In.	Ht. In.	Rough Bronze	Fin. Bronze	N. P. Bronze
000	1/8	1/8	7/8	17/16	Dionac	\$.50	\$.60
00	1/2	1/8	11/8	$1\frac{1}{2}$	\$.56	.70	.82
0	2/3	1/4	$\frac{11}{2}$	$1\frac{3}{4}$.74	.90	1.06
2	2	3/4	21/8	$\frac{1^{15}}{2^{3}}$.96 1.28	1.15 1.50	1.36
3	31/2	1/2	211/16	21/2	1.76	2.15	2.60
4	5	1/2	31/6	23/4	3.20	3.30	3.40

No. 1119 Lunkenheimer Dextro Pressed Steel Spring Lock Grease Cups

Cap Screw Feed



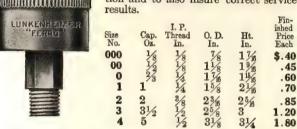
Equipped with an internal locking spring—a simple, though effective means of guarding against the effect of vibration, which tends to unscrew the cap.

No.		I. P. Thread Inches	Capacity Grease Ounces	Plain Finished Price Each
000 00 0 1 2	*	1/8 1/8 1/4 1/4 3/8	1/8 1/2 2/3 1 2	\$.55 .65 .85 .95

No. 1089 Lunkenheimer Ferro Pressed Steel Plain Base Grease Cups

Cap Screw Feed

The shank is machined from a solid steel bar and the method has been adopted to not only avoid the deficiencies and inaccuracies of less costly processes but to obtain the strength anticipated in steel construction and to also insure correct service



No 1090 Lunkenheimer Securo Pressed Steel Spring Lock Grease Cups

Cap Screw Feed

Equipped with an internal locking spring-a simple, though effective means for guarding against the effect of vibration, which tends to unscrew the cap.

Size No.	Cap.	I. P. Thread In.	O. D. In.	Ht. In.	Fin- ished Price Each
000 00 0	1/8 1/2 2/3	1/8 1/8 1/4	$1\frac{7}{8}$ $1\frac{7}{8}$ $1\frac{7}{8}$	17/6 19/6 115/6	\$.45 .55 .75
1 2	$\frac{1}{2}$	3/8	$\frac{15}{8}$ $\frac{23}{16}$	$\frac{2\frac{1}{16}}{2\frac{5}{16}}$.85 1.00



Copper-plated Steel Engineers' Sets

With Round Tray



Price	includes tray	•
	No. Pieces	Price
No.	in Set	per Set
C30	5	\$5.00
C40	6	7.00
Ste	amboat Sate	with

Round Tray

Steamboat sets are equipped with double bottomed trays, which contain recesses for holding the oilers in place, in the event of rough weather.

	No. Pieces	Price
No.	in Set	per Set
C70	5	\$6.00
C80	6	9.00

Engineers' Fillers

Copper-plated Steel



These engineers' fillers are made of extra heavy stock and are handsomely finished.

They are made in either copper-plated steel or brass. The steel fillers are heavily copper-plated both inside and out.

No.	Capacity Pints	Diam. Inches	Price per Doz.
19	1	41/4	\$14.00
19A	11/2	51/4	17.00
210	2	51/2	20.00
211	4	65/6	24.00

Copperized Steel Bench Oilers

Made from 20-gauge cold-rolled steel with high-grade clock spring steel bottoms. Heavy electro copper-plated

msr	ue anu	ou.	T. Inc.	openin	E, 1/2 H	HOHES.	III CILCUI	Hener	
				Price					Price
	Cap.	Diam.	Spout	per		Cap.	Diam.	Spout	per
No.	Pints	In.	In.	Dozen	No.	Pints	In.	Ĭn.	Dozen
12	1/4	$2\frac{3}{4}$	$2\frac{1}{2}$	\$4.50	14 AA	1/2	$3\frac{3}{4}$	5	\$8.50
13	1/3	33/8	3	5.50	14B	1/2	$3\frac{3}{4}$	9	8.50
13A	1/3	33/8	5	6.00	15	1	$4\frac{1}{4}$	3	9.25
14	1/3	33/8	9	6.50	15A	1	41/4	5	9.75
14A	1/2	$3\frac{3}{4}$	3	7.50	16	1	41/4	9	10.50

All oilers can be fitted with spouts 21/2 to 18 inches in length. Spouts 9 inches and longer are curved. These spouts are interchangeable and will fit other styles of oilers.

Engineers' Drip Oilers

Made from steel having a bright tin or copperized finish. The spout being on the side of the oiler permits of all the oil being poured from the oiler while in a horizontal position.

-		Tin		
	Cap.	Diam.		Price
No.	Pints	In.	In.	per Doz.
61	1	3	12	\$3.75
71	$1\frac{1}{2}$	4	14	4.25
81	2	4	16	4.75
	Co	pperi	zed	
	Cap.	Diam.	Spout	Price
No.	Pints	In.	In.	per Doz.
65	1	3	12	\$6.25
my per	11/	A	1.4	7 95

85

16



Copper-plated Steel Railroad Oilers

Copper-plated Steel

These oilers are drawn seamless in two parts from 20-gauge cold-rolled steel.

No.	Capacity Quarts	Diameter Inches	Spout Inches	Price per Doz.
10	1/2	33/8	12	\$14.00
11	1	41/8	18	18.00
*100	1/2	33/8	9	14.00
*101	1	41/8	12	18.00
*111	2	5	10 or 14	20.00

*Have spouts 1½ inches diameter at base.

Gem Steel Oiler Spouts



Cloth Insertion Rubber Sheet Packing



Recommended for use with water which is cold or merely warm at pressures up to 300 pounds per square inch or for air which is practically free from oil at pressures up to 100 pounds and for low pressure steam.

Made in two grades, with cloth insertion, cloth one side or

	1		TES		N	o. of Plie	:s
Thick-	C11 .11	Cloth	Cloth	Thick-		Cloth	Cloth
ness	Cloth	One	Both	ness	Cloth	One	Both
In.	Inserted	Side	Sides	In.	Inserted	Side	Sides
1/16	1	2	2	3/16	3	3	4
3/32 1/8	1	2	2	17.	4	4	5
1/2	2	3	2	7/4	-26	-36	U
/8	44	U	e)	* 0			0.0

The cloth whether used as an insertion, or on the outside, counts as one ply. Standard width 36 to 40 inches, and standard weight per roll is 175 to 250 pounds. Approximate weights per square yard are as follows:

Grade	Thickness	WEIGHT	POUNDS, PER SQUAR	E YARD
No.	Inches	C. I.	C.O.S.	C.B.S.
1	3/6	4.875	4.875	5.125
2	1/6	4.75	4.75	5.
Price			per pour	nd

Diaphragm Sheet Packing



Made of a superior quality of rubber, with a special woven heavy duck insertion, duck one side, or duck both sides, any thickness desired.

Made with a high quality of friction between plies.

To be used for steam. water and damper regulators.

Price.....per pound \$2.00

U. S. Rainbow Sheet Packing



Will pack an air, steam, hot or cold water joint equally well and will not blow out under high pressure or temperature. It is a nonconductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

It will make a tight joint however rough the surfaces to which it is applied may be. Furnished in standard rolls

36 inches wide, $\frac{1}{32}$ to $\frac{1}{4}$ inch in thickness, and weighing approximately 100 and 200 pounds.

Price.....per pound \$1.00

Tenax Sheet Packing

Thickness, Sheet . . . inches

The Original Blue Sheet Tough, compressed asbestos fibre sheet. Will stand a temperature of 1600° F. and a pressure of 6000 pounds.

It is a packing that will, without giving out or thinning down, stand up under a gas engine exhaust, cylinder explo-sions, acid, alkali ammonia and oils.

Comes in blue or black graphited. Size sheets, 50x50 inches. Can also be furnished in sizes 25x25 and 25x50 in. if desired. $\frac{1}{32}$ $\frac{1}{16}$ $\frac{2}{32}$ $\frac{1}{18}$ $\frac{1}{12}$ $\frac{1}{12}$

Weight... pounds $4\frac{1}{12}$ $9\frac{1}{2}$ 18 2 2 rice... per pound \$2.00 2.00 2.00 2.50 *Furnished in black graphited only. Weight.....pounds

Paimetto Twist Packing





Any size valve can be packed from one spool, by unstranding, as each single strand is a perfect packing in itself.

			O 02 0000 00	an to be	rece pac	tring in	TOOCIL	
Size	No.	Price	Size	No.	Price	Size	No.	Price
In.	Feet	per Lb.	In.	Feet	per Lb.	In.	Feet	
1/8	120	\$2.00	5/6	23	\$2.00	1/2	8	\$2.00
3/16	75	2.00	3/8	14	2.00			
1/8 3/16 1/4	50	2.00	5 16 3 8 7 16	10	2.00			

Palmetto Braided Packing



Designed especially to meet the exacting conditions of superheated steam, air and ammonia. It is made of a material that cannot char or burn and owing to its peculiar method of lubrication it does not get hard in service.

Each box contains about five pounds braided round or square—in sizes 14, 56, 38, 16, 12, 95, 58, 116, 34, 196, 78, 116, 1, 118, 114, 138, 112, 158, 134, 118 and 2 inches.

...... per pound \$2.00



Square Hydraulic Packing

Made of special closely woven duck, with a high grade rubber friction. The duck is laid diagonally instead of at right angles.

For hot and cold water service. Price per pound

Square Flax Packing

Made of pure, long fibre flax, possessing great strength. Contains pure lubricants and is without hemp, jute, tow or any gritty substances.

Sizes, 1/4 to 3 inches.

Price per pound



Skookum Cross Expansion Piston Rod Packing



For steam pressures up to 125 lbs.; for oil, air, ammonia, brine and all liquids regardless of temperature or pressure. Skookum retains its square corners and does not roll. Made in sizes, advancing by 16ths from 36 to 2 inches square.

..... per pound \$1.25

Rubber Pump Valves



These valves are adaptable to a wide range of conditions which have been investigated for the purpose of ascertaining the correct compound to give the best results.

	Service	For Pressure
Consistency	Intended for	Pounds
Soft	Cold Water	80 to 100
Medium	Semi-hot Water	100 " 250
Hard	Hot Water	125 " 300
In ordering,	state diameter, thickness	and size of hole.

Price upon application.

Low Pressure Rubber Diaphragms



Kearsarge Standard Asbesto-Metallic Boiler Manhole, Handhole and Tube Plate Gaskets



For packing manhole and handhole plates of boilers. Made of Asbesto-Metallic fabric treated with a heat resisting compound and folded into several plies or thicknesses to proper size and shape. Furnished in oval form to fit plates for which they are intended.

" 119 " Tube Plates

Eclipse Sectional Gaskets



Consists of a tube of Rainbow Compound having a central hole throughout its length into which is inserted a metal connecting tube, the two butted ends being wrapped with a special tape, thus forming a continuous gasket.

14 and 36-inch for pipe unions, 1/2-inch for handhole plates, 58 and 34-inch for manhole plates, 7/8 and 1-inch for extra large manhole plates.

Price......per pound \$1.25

Flexitallic Gaskets



Flexitallic Gaskets are especially recommended for boiler manholes, handholes, and tube caps for water-tube boilers; also pipe flanges, super-heaters, steam hammers, etc., or any place impossible to hold tight with ordinary gaskets.

Pipe Flange Gaskets

	-	- lange Ga	Even Un	eret
	L. D. x O. D.	D	I, D. x O. D.	IVI-
Size of	Diameters		Diameters	
Pipe	Flexitallic	Price	Flexitallic	Price
Inches	Required	Each	Required	Each
1	13/4x 21/2	\$.10	13/4x 25/8	\$.10
11/4	21/8x 27/8	.12	21/8x 31/8	.15
174	91/- 91/		03/ 93/	
$1\frac{1}{2}$	$2\frac{1}{2}$ x $3\frac{1}{4}$. 15	$2\frac{3}{4}$ x $3\frac{3}{4}$.21
2	$3\frac{1}{8}$ x $3\frac{7}{8}$.21	$3\frac{1}{4}$ x $4\frac{1}{4}$.25
21/2	$4 \times 4^{3}/_{4}$.24	$3\frac{7}{8}$ x $4\frac{7}{8}$.30
3	$4\frac{1}{4}$ x $5\frac{1}{4}$.29	47/8x 57/8	.35
31/2	$5\frac{1}{4} \times 6\frac{1}{4}$.33	$5\frac{1}{4}$ x $6\frac{1}{2}$.40
4	$5\frac{5}{8}$ x $6\frac{5}{8}$.35	55/2x 67/8	.45
41/2	5/8A 0/8			.60
4 1/2	55/8x 67/8	.40		
5	$6\frac{3}{8}$ x $7\frac{5}{8}$.45	63/8x 83/8	. 70
6	$7\frac{1}{8}$ x $8\frac{5}{8}$. 60	$7\frac{3}{4}$ x $9\frac{3}{4}$.90
7	$8\frac{3}{8}$ x $9\frac{7}{8}$.75	$8\frac{7}{8} \times 10\frac{7}{8}$.95
8	$9\frac{1}{8}$ x $10\frac{7}{8}$.85	9½x11½	1.05
9	$10\frac{5}{8}$ x $12\frac{3}{8}$	1.00	105/8x13	1.10
10		1.30	113/-141/	1.40
	$11\frac{1}{4} \times 13\frac{1}{4}$		11 ³ / ₄ x14 ¹ / ₈	1.40
12	14 x16	1.50	$14\frac{1}{4}$ x $16\frac{3}{4}$	1.70
14	$15\frac{3}{4}$ x $17\frac{3}{4}$	1.80	$16\frac{1}{2}$ x19	2.05
15	17 x19	2.20	$17\frac{3}{8}$ x $19\frac{7}{8}$	2.45
16	$17\frac{5}{8}$ x20\frac{1}{8}	2.30	183/8x213/8	3.00
18	19 x21½	2.60	20 ³ / ₈ x23 ³ / ₈	3.48
20	20 ³ / ₄ x23 ³ / ₄	3.48	$22\frac{1}{2}$ x $25\frac{1}{2}$	3.96
	20%4X25%4 20%77257			
22	$22\frac{7}{8} \times 25\frac{7}{8}$	4.08	$24\frac{1}{2}x27\frac{1}{2}$	5.04
24	$25\frac{1}{8}$ x $28\frac{1}{8}$	4.56	27 x30	5.66
26	273/8x303/8	5.04	$31\frac{1}{8}x34\frac{1}{8}$	7.50
28	295/8x325/8	7.36		
30	$31\frac{1}{2}$ x $34\frac{1}{2}$	8.00		
-	02/2101/2	,		
	Flange	Union G	iaskets	
1/2	7/8x 13/8	\$.04	13/6x 13/4	\$.05
72	78X 178			
3/4	1 x 15/8	.05	13/6x 13/4	.05
1	$1\frac{1}{4}$ x $1\frac{7}{8}$.06	13/8x 2	.06
11/4	1½x 25/8	.07	15/8x 27/6	.07
11/2	$2 \times 2^{3}/4$. 10	2 x 23/4	. 10
2	$2\frac{1}{2}$ x $3\frac{1}{4}$. 15	$2\frac{3}{4}$ x $3\frac{1}{2}$.17
21/2	3½x 3½	.20	$3\frac{1}{8}$ x $3\frac{7}{8}$.20
3	35/8x 41/2	.22	35/8x 41/2	.22
$3\frac{1}{2}$	41/m 51/		41/- 51/	.26
	$4\frac{1}{8}$ x $5\frac{1}{8}$.26	4½x 5½	
4	$4\frac{1}{2}$ x $5\frac{5}{8}$.31	$4\frac{5}{8}$ x $5\frac{3}{4}$.31
$4\frac{1}{2}$	$5\frac{1}{4}$ x $6\frac{3}{8}$. 36	$5\frac{1}{8} \times 6\frac{1}{4}$.36
5	$5\frac{3}{4}$ x 7	.42	$5\frac{3}{4}$ x 7	.42
6	$6\frac{3}{4}$ x $8\frac{1}{8}$. 53	$6\frac{3}{4}$ x $8\frac{1}{8}$. 53
7	77/8x 91/2	.72	$7\frac{1}{2} \times 9$. 60
8	$8\frac{7}{8}$ x $10\frac{1}{2}$.78	$8\frac{1}{2}$ x $10\frac{1}{8}$.70
9	03/2-111/		10%x12%	1.08
	$9\frac{3}{4}$ x $11\frac{1}{2}$.89		
10	$10\frac{3}{4}$ x $12\frac{3}{4}$	1.10	$12\frac{7}{8}$ x $14\frac{7}{8}$	1.32
10				
12	131/8x151/8	1.32		
12 14	$13\frac{1}{8}$ x $15\frac{1}{8}$ $15\frac{1}{4}$ x $17\frac{3}{8}$	1.55		
	131/8x151/8		• • • • • • • •	

2.00 Flange gaskets are made to fit inside bolts. Order by size of pipe and state if for standard or extra heavy fittings.

Oval Gaskets For Handhole Plates Size Price Price Size Inches Inches Each Each Inches Each \$.20 \$.30 3 x 4 \$.15 3x55x731/2× 41/2 .20 .25 .50 4x6 6x8 For Manhole Plates \$1.35 \$1.20 10 x15 11x15\$1.25 12x16

Boiler Tube Cap Gaskets For All Makes of Water-tube Boilers

Always state name of boiler on which gaskets are to be used. Prices upon application.



Asbestos Wick

Style X is a plain asbestos wick, XX is pure asbestos for wire wiping and stem packing. Standard is long fibred, hard twisted for same uses.

04 1.	Pounds		Price
Style	per Ft.		per Pound
\mathbf{X}	60		\$.50
XX	80		.75
Standard	80	*	
to a primary control of	80		1.00

Candle Wick

In Balls

Carefully manufactured of cotton specially selected for the purpose.

For packing small valve stems, etc. Furnished in 1/8 and 1/4-pound balls.

Price.....per pound



Mineral Wool



A mineral substance in fibrous form, used for fire-proofing buildings and deadening sound. Weighs about 12 pounds to the cubic foot, equal to about 34-pound to 1 square foot, 1 inch thick. In bags weighing about 60 pounds each.

Prices upon application.

Cotton and Wool Waste



Less than 50-pound bale takes 2 cents per pound advance over 100-pound bale.

Fifty-pound bale takes ½ cent per pound advance over 100-pound bale.

ŀ	rice,	No. 1	, White (Cotton 1	Waste	 	.per	pound		
	••	" 2	66	66	66			"		
	66	Mach	ined Cop	Waste .		 		66		
		No. 1	Colored	Cotton	Waste	 		"		
	42	" 2	"	44	"	 	•	44		•
	66	" 3	66	66	66	 		44	• 1	,
	æ	Wool	Waste					u		•
		,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				 				

Asbestos Lead Joint Runners



Made of specially prepared pure asbestos rope, having a ferrule on each end, and provided with clamping device for fastening in place on the pipe.

Size No.	Size, Rope Inches	For Pipe Inches	Price Each
1	3/4	2, 3 and 4	\$2.15
2 3	3/4	4, 5 " 6	2.35
3	1	6, 8 " 10 .	4.15
4	1	10, 12 " 14	5.40
5	11/4	16, 18 " 20	11.00
6	1/4	24	12.25
8	174	90	13.95
9	174	$\begin{array}{c} 36 \\ 42 \end{array}$	15.75
10	11/4	48	17.65 18.80

Asbestos Sheet Mill Board



Thick- ness In. 1/32 3/64 1/16	Lbs. per Sheet 40x40 In. 2.4 2.75	Price per Sheet	Thickness In. 3/32	Lbs. per Sheet 40x40 In. 5.5	Ord Pri- pe She
764			78	- 6	
1/16	3.65		3/16	10	

Especially adapted for fireproof lining of floors, partitions, etc. Also for packings, fire screens, linings for ranges, stoves, grates, gas backs, etc.

Sheets come in sizes 40x40 inches, or 42x44 inches. Made in hard, medium and soft grades. Medium furnished unless otherwise ordered

ordere	ed.						
Price	Thick-	Lbs. per		P	ri	ce	,
per	ness	Sheet		T)e	7	
Sheet	In.	40x40 In.	1	Sİ	ae	et	
	1/4	14					
	3/8	20					
	1/2	25					

Asbestocel Board

Made in ½,¾, 1, 1¼, 1½, 1¾, 2 and 2¼ inch thickness. In sheets, 36x36 inches and blocks 6x36 inches.

Prices upon application.



Asbestos Corrugated Paper



Generally used for insulating hot air heater or furnace pipes, etc. Furnished in rolls 37½ inches wide containing approximately 250 square feet.

Thickness, ¼ inch.
Prices upon application.

Asbestos Paper



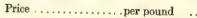
An excellent fire-resisting sheathing material, extensively used for the protection of wood partitions, walls, ceilings and in all kinds of building construction.

Also used for lining weather boards, floors, etc., being especially desirable for such purposes as it is practically indestructible and is absolutely verminproof.

Thick- ness Inch	Wt., Lbs. per 100 Sq. Ft.	Price per Pound	Thick- ness Inch	Wt., Lbs. per 100 Sq. Ft.	Price per Pound	Thick- ness Inch	Wt., Lbs. per 100 Sq. Ft.	Price per Pound
.015	6		.025	12		1/16	35	
.018	8		.028	14		3/32	53	
.020	10		1/32	16		1/8	68	

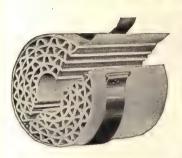
Asbestos Cement

Made of asbestos fibre and binding materials that have high insulating values. It is easy to mix and apply, and readily adheres to hot surfaces. It finishes with a hard durable and attractive surface, and does not crack, break or peel off. Packed in 100-pound bags.





Asbestos Aircell Pipe Covering



This pipe covering is the standard for low pressure steam and hot water

pipes.
It is made up of alternate layers of plain and corrugated asbestos paper. Sal-Mo asbestos paper is used in the manufacturing of this covering.

Pipe covering is firm and uniform in section. It is light, fire-proof and durable.

Made in sections 3 feet long. Thickness ½, ¾ and 1 inch. Finished with canvas jacket and brass lacquered metal bands. Made to fit all standard pipe sizes. Sold from regular sectional pipe covering lists.

85% Magnesia Pipe Covering



For high pressure steam lines boiler and locomotive lagging. Carbonate of magnesia is fire-proof and a non-conductor of heat. Asbestos fiber is light and almost indestructible; it also has a high heat insulation value.

Made in sections 3 feet long. Standard thickness, 1 inch. Finished with canvas jacket and brass lacquered metal bands. Made to fit all standard pipe sizes.

Sold from regular sectional pipe covering lists.

List Prices for Sectional Pipe Insulation Standard Thickness with Brass Lacquered Bands

These pipe insulations are supplied in sections 3 feet long, canvassed and with brass-lacquered bands.

Size	Price	Size	Price
Pipe	per .	Pipe Inches	per Foot
Inches	Foot		
1/2	\$.22	6	\$.80
1/ ₂ 3/ ₄	.24	7	1.00
1	.27	8 .	1.10
11/4	.30	9	1.20
11/2	.33	10	1.30
2	. 36	12	1.85
2 2 ¹ / ₂ 3	.40	14	2.10
3 2	.45	16	2.35
31/2	. 50	18	2.60
4	. 60	20	2.85
	. 65	24	3.30
4½ 5	. 70	30	4.00

Johns-Manville Fireite Asbestos **Furnace Cement**

A general cement recommended to householders for use on their heating plants. It is prepared ready for use, adheres

readily and firmly to castings and tin and sets in a few hours after application. For setting up and repairing broken joints in furnaces and heaters. For stopping holes in flues.

No in Price

Company	
	INS-MANVILLE
Mile Asi	bestos Furnace Res
	AFCR SHE
ar a still it	
A	
1	
- Contract	The second secon

	Quantity	Case	per Lb.
	1-pound Cans	100	\$.18
	2-pound Cans	50	.17
	5-pound Cans	24	.14
	10-pound Cans	18	.14
	25-pound Cans	4.5	.14
	50-pound Cans		.135
1	00 and 200-pound Dr		.11
1	50 and 800-pound Dr	ums	.10
-7	oo and ooo pound Di	CELEBOO 4 4	

Water Hose



Two-ply hose, designed to conduct water under moderate pressure only. Sizes above 3-inch are mainly for tank hose; 3-ply hose, of medium strength, suitable for hydrants, garden and pump uses, street sprinkling, washing decks, etc.

Four-ply hose, recommended for all purposes where a particularly strong and reliable article is required.

Five and 6-ply hose, for use where great resistance to pressure or very severe service is required.

		1	PRICE, PER FOOT-NO. OF PLIES-	r	
Internal Diam. In.	2	3	-NO. OF PLIES-	5	6
1/2	\$.20	\$.25	\$.30	\$.37	\$.45
3/4	.25	.30	.37	.46	. 55
1	.33	.40	.50	.62	.75
11/4	.42	.50	.62	.77	.93
11/2	.50	.60	.75	.93	1.12
13/4	.58	.70	.87	1.08	1.30
2	.66	.80	1.00	1.25	1.50
21/4	.75	.90	1.12	1.40	1.68
21/2	.83	1.00	1.25	1.56	1.87
$\frac{2^{1/2}}{2^{3/4}}$.92	1.10	1.37	1.71	2.05
3	.99	1.20	1.50	1.87	2.25
31/2	1.16	1.40	1.75	2.18	2.62
4	1.32	1.60	2.00	2.50	3.00
5	1.65	2.00	2.50	3.13	3.75
6	1.98	2.40	3.00	3.75	4.50
7	2.31	2.80	3.50	4.38	5.25
8	2.64	3.20	4.00	5.00	6.00
9	2.97	3.60	4.50	5.63	6.75
10	3.33	4.00	5.00	6.25	7.50

All intermediate sizes charged at the list price of the next larger size, thus: 11/8-inch is charged at 11/4-inch price, etc. Furnished regularly in 25 and 50-foot lengths.

Steam Hose

			PRICE, 1	DER FOOT-		
Internal				PLIES-		
Diam. In.	3	4 .	5	6	7	8
1/2	\$.47	\$.56	\$.70	\$.84	\$.98	\$1.12
3/4	.57	.71	.87	1.05	1.23	1.41
1 "	.70	.87	1.07	1.28	1.50	1.70
11/4	.85	1.04	1.30	1.56	1.82	2.08
$1\frac{1}{2}$	1.02	1.25	1.56	1.87	2.18	2.50
13/4	1.18	1.45	1.81	2.17	2.53	2.90
2	1.34	1.66	2.07	2.49	2.90	3.32
21/4	1.50	1.87	2.33	2.80	3.27	3.74
21/2	1.66	2.08	2.60	3.12	3.64	4.16

When ordering, state steam pressure used.

Note.—The list on steam hose applies to brewer's, air brake car heating and air drill hose also.

Unlined Linen Fire Hose



Recommended for interior use in preference to a rubber lined cotton hose. The linen hose has no lining to deteriorate with age and will last a great deal longer. Its chief value is for short lines for brief use inside the building. On account of its lightness, compactness and convenience, it can be handled by one man alone. When water is first turned on, the hose will leak slightly, but the fibers will almost immediately expand and the hose becomes

practically water-tight.

Couplings are not included in price and must be specified when wanted.

Size	Price	Size	Price	Size	Price
Inches	per Foot	Inches	per Foot	Inches	per Foot
1 3/4	\$.25 .30	$\frac{11/4}{11/2}$	\$.35 .42	2· 2 ¹ / ₂	\$.54 .66

U. S. Mogul Corrugated Cover Garden Hose



Braided and Moulded Construction

A flexible hose which will not kink. Capable of withstanding the heaviest pressures. A high quality rubber tube and a tough rubber cover insure the utmost in resistance to rough handling. Furnished in continuous length coils approximately 500 feet.

Size In.	Working Pressure Pounds	Price per Foot	Size Inches	Working Pressure Pounds	Price per Foot
3/8 1/2	$150 \\ 125$	\$.20 .25	5/8 3/4	125 125	\$.28

Brass Hose Clamps



Made of heavy wrought brass, this clamp is rust-proof clear through.

Tongue runs in channel holding it close to hose and making a uniform grip.

Band portion is pliable, grips tight, and can be opened up, removed and used

Stiff ears cannot pull together at top when tightened, and also form a perfect nut lock.

Heavy shoulder engages vise jaws, permitting clamp to be pulled tremendously tight.

For Water Hose

				Wt						Wt.	
		Inside (Gross	Lbs	. Price			Inside	Chann	Lbs.	Price
Size 1	Hose	Diam.	in	per	per	Stre	HOSE	Diam.			
In.	Ply	In.	Box	Gross	Doz.	In.	Ply	In.	Box	per	per
										Gross	Doz.
/16	3	7/16	1	$2\frac{1}{4}$		1	2	1^{11}_{32}	1/2	17	\$2.00
3/6	3	1/2	1	4		1	3	1 7/6	1/2	18	
3/		1/2 5/8	1					1/16	72		2.00
78	4	78		$4\frac{1}{4}$		1	4	117/32	1/3	20	2.00
1/8	3	13/16	1	43/4		$1\frac{1}{4}$	3	121/32	1/3	21	2.50
1/2	2 3 2 3	7/8	1	51/4		11/4	4	113/16	1/3	23	
1%	3	15/6	7	534			0	1 15 16	73		2.50
13	4	716	1	074		$1\frac{1}{2}$	3	1 15/16	1/4	30	3.00
2/2	4	11/32	1.	$6\frac{1}{2}$		11/2	4	21/6	1/4 1/4	31	3.00
3/8/8/2/2/2/8/8/4/4/4/4/4/4/4/4/4/4/4/4/4	3	11/32	1	61/2		2	3, 4	29%	1/8	38	4.00
5/0	4	13/32	1	634				077			
32	0	19/				$2\frac{1}{4}$	3, 4	27/8	1/12	48	6.50
74	2	13/32	1	63/4		$2\frac{1}{2}$	3, 4	31/16	1/12	50	7.00
3/4	3	13/16	1	$6\frac{3}{4}$		3	3, 4	315/16	1/12	72	10.00
3/4	4	11/4	1	734		0	0, 1	0 / 10	712	14	10.00
/4	· X	1/4		174							
				E.	or Ste		Hann				
	_				or ste	am	nose				
3/4	3	$1\frac{7}{16}$	1/2	18	\$2.00	11/2	3, 4	$2\frac{7}{32}$	1/4	33	\$3.50
3/4	4	1^{17}_{32}	1/3	20	2.00	11/2	5	012			
	3	1 5 34				1/2		2^{13}_{32}	1/8	35	4.00
1	0	15/8	1/3	21	2.50	2	3, 4	211/6	1/6	38	5.50
1	4	1^{21} 32	1/3	21	2.50	2	5	$2\frac{7}{8}$	1/12	50	6.50
11/4	3	115/6	1/	30	3.00	$2\frac{1}{2}$		21/8			
		1 21 /	13			4/2	3, 4		342	.50	8.50
11/4	4	1^{31}_{32}	1/4	30	3.00	21/2	. 5	3%	1/12	66	9.50
								- 100		-	



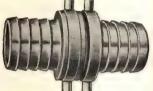
Cast Brass Garden Hose Couplings

Sise Inches	Price per Dozen
1/2 *	\$2.40
1 3/4 -	2.40

*Hose thread furnished unless otherwise ordered.

Water Hose Couplings

Size In. 11/4 11/2 2	Price per Doz. \$10.00 14.00	Size In. 3 3 ¹ / ₂	Price per Doz \$75.00 120.00	
	24.00	4	150.00	
$2\frac{1}{2}$	48.00			





Steam Hose Couplings

Always furnished with iron pipe thread.

Lgth.	Lath		Lgth.		Leeth
Size Tail Price	Size Tail	Price	Size Tail	Price	Igth. Size Tail Price
In. In. per Doz.	In. In.	per Doz.	In. In.		Dize fall Price
		200 2002	Att. Lill.	per Doz.	In. In. per Doz.
72 22 \$15.00	1 31/4	\$18.00	11/2 4	\$30.00	2½ 5 \$72.00
3/4 3 15 00	11/4 31/	24 00	2 41/	40.00	2/2 0 4:2.00
74 0 10100	- /4 0/2	4. T. OU	4 4/4	42.00	*** * * * * * * * * * * * * * * * * * *

Wrought Brass Garden Hose Couplings

Size	Price
In.	per Doz.
1/2	\$2.40
3/4	2.40
1	4.40



Male Hose Nipples

1/2 \$3.50 11/2 \$ 3/4 3.50 2	Price per Dos. \$10.00 14.00 28.00
----------------------------------	--

Male and Female Hose Nipples

Size Inches	Price per Doz.	Size Inches	Price per Doz.
3/4	\$3.50 3.50	11/2	\$10.00
1 11/4	5.00 9.00	21/2	28.00



Hose Reducers and Bushings





=3	
UCOF	· Bush

Size Inches 3/4X 1/2 1 X 1/2 1 X 3/4 11/4X 3/4 11/4X 3/4	Price per Dos. \$6.50 6.50 8.00	Size Inches 11/2x11/4 2 x 3/4 2 x1 2 x11/4	Price per Dos. \$12.00 13.00 14.00 16.00	Size Inches 21/2×11/4 21/2×11/2 21/2×2 3 ×2	Price per Dos \$23.00 24.00 26.00 30.00
$\frac{1^{1}/_{4} \times 1}{1^{1}/_{2} \times 3/_{4}}$	8.00 10.00 11.50	$\begin{array}{cccc} 2 & x1\frac{1}{4} \\ 2 & x1\frac{1}{2} \\ 2\frac{1}{2}x & 3\frac{1}{4} \end{array}$	16.00 18.00 20.00	3 x2 3 x2 ¹ / ₂	30.00 36.00
$1^{1}/_{2}$ x1	11.50	21/2×1	22.00		

Giant Rain King Lawn Sprinklers



There is no wear-out to the Giant Rain King Lawn Sprinkler.

It stands 4 feet high and has 20-inch sprinkler arms.

This sprinkler has 4 nozzles, each adjustable for any spray, direction and volume of water. Sets in a jiffy for revolving or stationary sprinkling.

Revolving, will water a circle up to 75 feet in diameter depending upon the pressure. Quickly set to any number of adjustments.

Fills every sprinkler requirement.

Sprinkler is finished in green enamel with attractive brass fittings.

Packed 1 to a carton.

Weight, 19 pounds.

Price..... each \$12.50



Rain King Lawn Sprinklers

Distributes water at any pressure and any distance up to a 50-ft. circle. Instantly adapted to area to be covered; coarse or fine spray as desired. Made entirely of brass and cast iron.

 Size Base Inches
 Height Inches
 Weight Pounds
 Price per Doz.

 53/4x6
 53/4
 3
 \$42.00

Two-purpose Rain King Lawn Sprinklers



Nothing to get out of order. No leaking at connections. Strong, sturdy and simple in design and construction. As a hose nozzle it gives any desired spray from a fine mist to a powerful compact stream by turning peg. Loosen wing nut and give hose connection quarter turn to change from nozzle to efficient stationary spray.

Adapted to lawns or gardens of any size and operates efficiently under any water pressure.

Packed six in a display carton.

Price.....each \$2.00

Rain King Hose Nozzles

Consists of only 2 parts and a nut and washer. Instantaneous adjustment from a long solid stream to the finest mist



spray with only a quarter turn from one extreme to the other. Packed 1 in a box, 12 boxes to a carton, 12 cartons to a case. Price, Weight, 10 Ounces ... each \$1.50

Spray Nozzles

A heavy spray nozzle giving full stream, spray and shut-off. Shut-off is positive, without possibility of a leak.



Price, 34-Inch Brass per dozen \$9.00 9.80

Thompson Concealed Lawn Sprinkling Systems



Thompson Systems consist of Thompson Sprinkler Heads placed at intervals in the lawn and set even with the top of the ground, but below the level of the grass, these being connected to water pipes underground, and operated from Thompson Control Valves. The systems are laid out in sections, a certain number of heads and one valve to each section. The number of heads to a section and the number of sections that can be satisfactorily operated at a time depend largely upon the size of the water supply line and meter, and upon the available water pressure.

A concealed system in a lawn is virtually hidden from sight, as the sprinkler heads can be seen only upon close inspection. Since the heads do not protrude above the surface of the ground, they in no way interfere with the use of a lawn-mower. These systems meet the requirements of practically any kind and size of lawn, new or old, large or small, level or terraced. Used in parks, cemeteries, school lawns, the grounds of public and semi-public buildings and the like, to the needs of which they are especially well suited.

The Thompson System is always ready for use. A turn of the valve starts the system operating; there is no hose to bother with.

This system, by providing a calculated and controlled means of sprinkling, often cuts water bills in half.



Full-Circle Zinc Brass Lined



Half-Circle Zinc, Brass Lined



Square Zinc, Brass Lined



Full-Circle, All Brass



Half-Circle, All Brass

Thompson Sprinkler Heads are made of zinc with brass nozzle-cores or entirely of brass. Different types throw full-circle, half-circle, quarter-circle or square sprays. Half-circle and quarter heads are used along walks, drives, etc.

Detailed plans for the installations of Thompson Concealed Systems, prepared without charge. With the aid of a Thompson Plan anyone who understands pipe-fitting can easily put in the system.

To obtain a plan, send a sketch giving dimensions of each area to be springled; water pressure; location of meter, and of the water supply line; location of trees, shrubs, gardens, etc. Include any other information that may prove helpful.

Prices and special catalogue upon application.

Style T Wirt's Hump Hose Racks



Made of steel tubing, steel rod and malleable iron.

Designed with a hump in the bottom which takes the weight off the folds in the hose and permits them to lie loose and open. The end or front of the rack is partially enclosed. This basket formation holds the stack of hose in position when drawn off, preventing the stack from sliding out bodily and falling to the floor in a tangled mass, as is frequently the case with the old style end rack.

When ordering hose racks or reels, give size, kind and length of hose, and specify whether wall brackets or pipe clamps are wanted; if the pipe clamps, specify size.

	CAP. Hos					
No.	Unlined Linen	Cotton Rubber- lined	Size of Hose	Height	Length	Jap. Red Price
A-0		Mill	Inches	Inches	Inches	Each
A-0X	50	* * *	11/4 or 11/2	$16\frac{3}{8}$	$25\frac{1}{4}$	\$8.50
A-0A A-00	50	* * *	2	$17\frac{1}{8}$	$26\frac{5}{8}$	8.50
A-075	50	* * *	$2\frac{1}{2}$	171/8	$26\frac{5}{8}$	8.50
A-075 A-0X75	75	* * *	11/4 or 11/2	$19\frac{1}{8}$	$25\frac{1}{4}$	9.35
A-0A75	75	* * *	2	$19\frac{3}{4}$	$26\frac{5}{8}$	9.35
A-0075 A-1	75		$2\frac{1}{2}$	$19\frac{3}{4}$	$26\frac{5}{8}$	9.35
A-1X	100	25	1¼ or 1½	$21\frac{1}{8}$	27	10.20
A-1.A. A-2	100	25	2	$21\frac{3}{4}$	$28\frac{3}{8}$	10.20
A-2 A-3	100	25	$2\frac{1}{2}$	$21\frac{3}{4}$	$28\frac{3}{8}$	10.20
A-3X	150	50	$1\frac{1}{4}$ or $1\frac{1}{2}$	$28\frac{3}{4}$	$32\frac{1}{8}$	11.90
A-3A A-4	150	50	2	$28\frac{3}{4}$	$32\frac{1}{8}$	11.90
	150	50	$2\frac{1}{2}$	$28\frac{3}{4}$	$32\frac{1}{8}$	11.90
A-5	200	100	$1\frac{1}{4}$ or $1\frac{1}{2}$	40	38	12.75
A-5X	200	100	2	40	38	12.75
A-6	200	100	$2\frac{1}{2}$	40	38	13.60

Style V Wirt's Wall Hose Reels

Made of steel tubing, steel rod and malleable iron castings. The tension axles are used so that the reel may be adjusted to run tight or loose as desired.

When ordering hose reels, give size, kind and length of hose, and specify whether wall brackets or pipe clamps are wanted; if the pipe clamps, specify size.

The prices given below cover brackets or pipe clamps up to 4-inch Larger clamps extra.

CAPACITY Hose, Feet



		9 - mark				
No.	Unlined Linen	Cotton Rubber- lined Mill	Size of Hose Inches	Height Inches	Length Inches	Vermilion Finish Price Each
0	50		11/4 or 11/2	201/8	1834	
00	50		2	$\frac{2078}{2018}$	10%	\$10.20
000	50		$2\frac{7}{1/2}$	$\frac{20\%}{20\%}$	183/4	10.20
$0^{1/2}$	75		11/4 or 11/2		19	10.20
001/2	75		2	217/8	201/8	10.20
0001/2	75			$\frac{221}{8}$	201/8	10.20
1	100	* * *	21/2	221/8	$20\frac{1}{2}$	10.20
21/2	100		11/4 or 11/2	263/8	23	10.20
31/2	100		. 2	$26\frac{3}{8}$	23	10.20
2		50	21/2	$26\frac{5}{8}$	23	10.20
3	150	50	$1\frac{1}{4}$ or $1\frac{1}{2}$	$31\frac{3}{8}$	$26\frac{1}{4}$	10.20
	150	50	2	$31\frac{7}{8}$	27	10.20
4	150	50	$2\frac{1}{2}$	$31\frac{7}{8}$	27	11.05
$5\frac{1}{2}$	200		$1\frac{1}{4}$ or $1\frac{1}{2}$	263/8	$22\frac{3}{8}$	11.90
61/2	200		2	$30\frac{3}{4}$	$24\frac{7}{8}$	12.75
71/2	200		$2\frac{1}{2}$	$30\frac{3}{4}$	251/8	13.60
5	300	100	11/4 or 11/2	32	$26\frac{1}{2}$	12.75
6	300	100	2	355/8	$29\frac{7}{8}$	13.60
7	300	100	$2\frac{1}{2}$	35 1/8	297/8	
8	400	150	$\frac{1}{2}\frac{1}{2}$	435/8	$\frac{29}{8}$ $\frac{321}{2}$	14.45
9	600	200	21/2	471/2		19.55
			4/2	21/2	36	25.50

Wirt's Royal Pressed Steel Hose Racks

This rack is semi-automatic; it can be operated by turning on the water before pulling off the hose. Water is held back at the fold of hose nearest to valve and does not come through until hose is all withdrawn. Should a valve be opened maliciously, water will be held back until noticed.

Has a covered top which prevents dust from rotting the linen fibres. Pins are rustproof. Hose folds over them in natural bends without pinching. Ample space between pins prevents mildew, increasing life of hose. Pins do not fall to floor when

mildew, increasing life of hose. Pins do not fall to floor when hose is removed but remain hanging ready for hose to be replaced. No strings or cords are necessary to keep hose on rack. Furnished in red finish and with wall bracket if not otherwise specified.

Prices given are for swivel type with iron pipe thread nipples; wall bracket type; and pipe clamp type with pipe clamp not over 4 inches. For larger pipe clamps add: for 4½-inch, 50 cents; 5-inch, 60 cents; 6-inch, 70 cents; 7-inch, \$2.20; 8-inch, \$2.70; 9-inch, \$3.00; 10-inch, \$3.20. For special or hose thread nipples with steel rack 1¼ and 1½-inch, add 80 cents; 2-inch, \$1.10; 2½-inch, \$1.30.

cents; 2-inch, \$1.10; 2½-inch, \$1.30.

Prices on polished brass racks and nickel-plated brass racks furnished upon application.

Style B No. 10 Wirt & Knox Tubular All Metal Hose Reels

Frame can be tilted down to the ground and forms a stand in which the reel revolves. There are no exposed spokes to interfere with either operation. This reel cannot tip over when unreeling. The weight of the hose is borne upon the rims. All metal tubular

steel rims and frame, steel spokes and steel reel head, corrugated galvanized sheet steel drums.

CAP. RUBBER HOSE, FT.



Reversible Hose Spanners	
Price, 2½-Inchper dozen	\$7.80
Common Hose Spanners	
Size inches $1\frac{1}{2}$ 2	21/2
Price	$\frac{2^{1}/_{2}}{5.00}$
Tabor Hose Spanners	_
Price, 1½-Inchper dozen	\$5.00

Total Eclipse Hydrants

Valve and working parts are of brass. Positive automatic drain closes against the pressure. Sand cup valve protector furnished with each hydrant. Removal of nozzle and top cap permits withdrawal of interior parts for replacement with ease and without digging up or disturbing connection to supply pipe. Plunger operates up and down

without twisting movement or tor-sional strain. When water is ad-mitted into the valve the drain outlet is completely sealed by cup washer on plunger without waste of water. When the valve is closed after operating, the drain outlet is unsealed or opened, allowing all water in stand-pipe to escape, preventing possibility of freezing.

IN		No. 1	Hydrants		A
	Set in Ground		-Price, Each- Size, Inches		9
M (Feet	3/4	-Size, Inches	11/4	1.46
The same of the sa	$1\frac{1}{2}$	\$9.80	\$12.70	\$19.70	11.20
A STORY	2	10.10	13.50	20.50	A LAND
	3	10.60	14.30	21.80	
	4	11.00	14.75	22.25	TARGES
	5	11.50	15.30	22.80	
No. 1, Compression Type	- 6	12.10	16.00	23.75	No. 7, Self-
Anti-freezin	8	13.50	18.50	27.00	closing Type Anti-freezing
	10	16.00	21.00	30,00	

		No. 7	Hydrants		•
Set in		EACH-	Set in	PRICE,	EACH-
Ground Feet	Size, I	NCHES	Ground Feet	SIZE, I	NCHES
	610.00	610 FO	_	74	1
11/2	\$10.80	\$13.70	5	\$12.50	\$16.30
2	11.10	14.50	6	13.10	17.00
3	11.60	15.30	8	14.50	19.50
A	12 00	16 75	10	17 00	20 00

Buffalo Pattern Service Boxes With 21/2-inch Shaft

· · · · · · · · · · · · · · · · · · ·					
		Extens	ion		Price
	No.	Inche	38		Each
	88	12			\$1.00
	89-A	12 to	20		1.25
	90-B	18 "	26		1.35
	91-C	21 "	33		1.55
	92-C	24 "	38		1.65
	92-D	24 "	42		1.85
	93-D	36 "	48	*	2.00
	93-E	36 "	54		2.15
	94-D	42 "	57		2.20
	94-D	42 "	60		2.30
		48 4			
	95-E	40	66		2.45
	95-G	40	84		2.95
	100-E	9.4	72		2.65
	100-F	54 "	78		2.80
	100-G	54 "	90		3.15

Extension Section For 21/2-inch Service Boxes

	Increases Length	Price		Increases Length	Price	
No.	Inches	Each	No.	Inches	Each	
151	91/2	\$.60	153	28	\$.95	
152	$16\frac{1}{2}$.75	154	33	1.05	

Covers, Bolts and Keys







							-	 -	-	-			
Price,	Keys Extra Co		 				 		 	٠		.each	\$.17
66	Extra Co	overs.		ď.			 		 	ï		. 46	.15
66	Brass Bo	olts	 			 ٠	 		 	٠	 ٠	. "	.10

Valve Boxes and Parts







No. 68 Regular Cover Marked Gas



No. 69 Regular Cover Marked Water



No. 255 Flanged Cover



Lock Cover

Valve Boxes, 51/4-Inch Shaft, No. 6 Base

This screw type adjustable valve box is for use with water and gas valves and is interchangeable with all styles of bases.

Covers marked "Water" will be furnished unless otherwise

Size	Extension Length Inches	Price Each	Size	Extension Length Inches	Price Each
AAA	*17	\$6.00	CC	48-60	\$9.00
$\mathbf{A}\mathbf{A}$	22-28	7.25	D	42-66	9.45
A	28-40	7.55	E	48-72	10.20
В	36-48	8.20	$_{ m G}^{ m F}$	60-84 72-96	10.95
C	42-54	8.55	Gr.	12-90	11.90

^{*}Stationary length.

Above prices are for boxes complete with No. 6 base, which is for valves 8 inches and smaller. When furnished with other size bases, prices are reduced or increased in accordance with the following:

Base No.	Shape of Base	Fits Valve Maximum Size Inches	Add to Above Price	Deduct from Above Price
4	Round	4 or Smaller		\$.25
†140	Dome	Up to 24		
8	Round	10 or Smaller	\$.50	
16	\mathbf{Round}	12 or 16	3.50	
16-24	Round	12 or 16	5.00	
160	Oval	16 or Smaller	. 50	
162	Oval	20 or Smaller	3.00	

†Same as with No. 6.

Covers for Valve Boxes

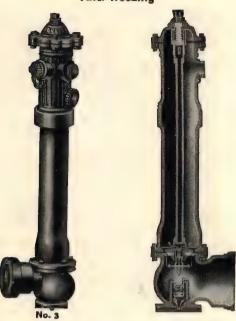
Price,	Regular and	Flanged	 each
Price,	Lock		 each



Sections
au.

No.	Length of Box Inches	Size Inches	Price Each
58	14	$5\frac{1}{4}$	\$1.75

Eclipse Fire Hydrants Anti-freezing



Sectional View

There is no complicate I mechanism to the Eclipse fire nydrant. Any worn out part can readily be replaced without digging up or disturbing the connection to supply pipe.

By unbolting and lifting top cap, all inside parts may be removed, repaired and replaced with utmost ease.

Equipped with a positive automatic drain insuring the hydrant.

Pressure tests to meet any and all requirements of a fire nydrant.

No water escapes through the drain when the hydrant is

When hydrant is closed after operating, all water in the body of the hydrant immediately escapes through drain outlet at the bottom of hydrant.

Nos. 6 and 10 hydrants are recommended for steamer nozzle connection in addition to the regular hose nozzles.

Nos. 6 and 10 hydrants are the same as No. 3, except having a large valve opening and standpipe.

An extra charge is made for flange inlet or flange inlet with companion flange.

In ordering, always give the following information, viz.—
Whether wrought iron pipe thread, flange, bell or spigot
connection. Size of bottom connection. Length from pavement to center of inlet. Size and form of nut to open hydrant.
Whether to turn to right or left to open. Number and size of
nozzles. Send hydrant cap or hose coupling for gauge of
thread.

Unless otherwise ordered, hydrant thread will be made to open by turning to the left. Frost cases furnished if desired.

No. 3							
Pave- Diam ment to One Two Three of Inlet Center 2½-inch 2½-inch 2½-inch One	One One Steamer Steamer Frost						
Pipe of Inlet Hose Hose Hose Steamer Inches Feet Nozzle Nozzles Nozzles Nozzles	Nozzle Nozzles Length						
3 5 \$32.00 \$34.00 \$36.00 \$34.0 4 5 32.00 34.00 36.00 34.0 5 5 34.00 36.00 38.00 36.0							
6 5 34.00 36.00 38.00 36.0 No. 6	10.00						
4 5 47.00 49.00 51.00 49.06 5 47.00 49.00 51.00 49.06							
No. 10 6 5 47.00 49.00 51.00 49.00							
Price, extra length, No. 3 stand-pipe, per foot \$1.50; Nos. 6 and 10, \$2.25.							

Price, extra length of frost case, No. 3, per foot, \$1.00; Nos. 6 and 10, \$2.00.

Trident Frost-proof Disk Meters With Breakable Bottoms





View of Breakable Bottom

Corrosion has always been the greatest enemy of the water meter. Until the adoption of the new Trident Oilenclosed Gear Train the chief cause of failure in service was always the corrosion of the gear train. In many parts of the country, strongly alkaline or slightly acid waters are encountered. Operating directly in the water, the gear train was the first part to be attacked and the resulting corrosion made replacement of this part necessary in a comparatively few years, besides occasioning loss of revenue.

This evil was recognized at an early day and years of study were devoted to the problem of overcoming it, but it was not until the adoption of the expedient of enclosing the train and covering the gears with a special protective lubricating compound that success was achieved.

Given proper conditions, any water meter will freeze. This meter is protected by a cast iron cap or bottom and retaining arms, the section of which is designed to withstand all pressures of ordinary service, but which will give away at about five hundred pounds per square inch. This will give away before any other part of the meter can be damaged. When the meter freezes, two of the cast iron arms on the breakable bottom are fractured. Only a few minutes are required to take off the broken cast iron bottom, relieve the measuring chamber of the accumulation of ice and replace the meter in service with a new cast iron bottom at a nominal cost

Size In.	Lgth. In.	Diam. In.	Maxi- mum Ht. In.	De- livery Gal.	Wt. Lbs.	Price Each	Coup- lings Price per Set
5/8 5/8×3/4	$7\frac{1}{2}$ $7\frac{1}{2}$	$\frac{51/2}{51/2}$	$8\frac{5}{8}$	$\frac{20}{20}$	$11\frac{1}{2}$ $11\frac{1}{2}$	\$20.00 20.00	\$1.00 1.50
3/ ₄	$\begin{array}{c} 9 \\ 10 \frac{3}{4} \end{array}$	$\frac{57/8}{91/4}$	$\frac{83}{91}$	34 53	$\begin{array}{c} 15 \\ 26 \end{array}$	30.00 44.00	1.50

Superior Water Softeners



The Superior Softener provides a constant supply of soft, clean, clear water. It eliminates the cistern with its uncertain, unsanitary supply. It can be installed at less cost than a cistern can be built.

The principle of water softening is not a new one. Its tremendous value has been recognized in industry, in laundries, hospitals and hotels, where it has been used for years. The domestic type of water softener is a development of more recent years.

The household water softener is a simple device. It has no moving parts to wear out and in time cause trouble. It consists of Zeolite, a mineral, and a tank, valves and fittings.

Superior Zeolite has been in use in residential and large industrial installations for more than eight years and has thoroughly demonstrated its worth. Zeolite is the heart of the water softener and its life and satisfactory performance are governed by the quality of the Zeolite.

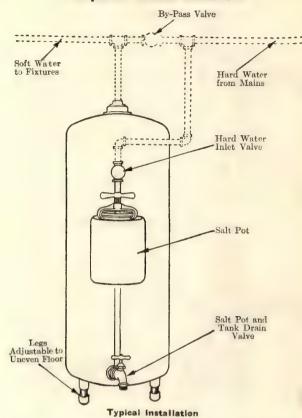
Superior Zeolite is a rugged, porous composition which contains only the necessary ingredients to soften water. It does not add injurious foreign chemicals to the water, will not dissolve, and delivers clean, clear water. It has the same wearing qualities characteristic of sand.

Softened water is delivered to all parts of the house under city water pressure. It is luxurious for the bath, shampoo and shaving. The skin is left soft and smooth. The hair is left soft and with a lustre. There is no high water line left in plumbing fixtures. Clothing is washed with half the soap required when using hard water. Original color is renewed. Strong caustics are dispensed with and the life of the fabric prolonged. It is suitable for drinking and cooking if the hard water is pure. Vegetables are cooked in less time and are more savory. Lime scale in hot water lines, heater coils, water fronts and heaters is eliminated. It cuts grease in drain pipes.

Large capacity necessitating fewer regenerations and quick regeneration are important factors which make the Superior Water Softener popular.

Construction and operation are simple so that any member of the household can operate and regenerate the plant.

Superior Water Softeners



The zeolite extracts lime and magnesia, the hardening elements, instantly when the hard water passes through the bed. It will continue to do so, delivering water soft as rain, until the bed becomes saturated with the hard elements.

It is then necessary to wash salt brine through the zeolite bed. The brine solution forces the hard elements from the bed and they are washed with the salt brine into sewer. Softener will then deliver another capacity run of soft water.

No. in Fam- ily	Consump- tion per Week Gal.	Consump. When Tub Baths Are Taken by Each Member Daily, Gal.	No. in Fam- ily	Consumption per Week Gal.	Consump. When Tub Baths Are Taken by Each Member Daily Gal.
2	300	600	7	735	1785
3	420	870	8	800	2000
4	520	1120	9	865	2250
5	600	1350	10	940	2400
6	660	1560			

The number of gallons of soft water produced between regenerations is governed by the hardness of the raw water.

	Soft Water Produced Between Regenerations, Gallons———————————————————————————————————								
No.	14	16	18	20	22	24	26	28	30
S-10	715	625	555	500	455	440	400	355	330
S-20	1430	1250	1110	1000	910	885	800	715	660
S-30	2150	1880	1660	1500	1360	1250	1170	1075	1000
S-40	3000	2625	2220	2100	1900	1750	1615	1500	1400
S-50	4285	3750	3330	3000	2725	2500	2310	2140	2000

If larger capacity is required install two units.

No.	Salt per Regenera- tion, Lbs.	Size, Lines and Valve Inches	SPACE RE- INCHI Floor		Approx. Shipping Wt., Lbs.	Price Each
S-10	8	3/4	12x22	58	285	\$110.00
S-20	16	3/4	16x26	58	435	150.00
S-30	24	3/4	16x26	64	596	195.00
S-40	34	$1, 1\frac{1}{4}$	24x36	60	880	320.00
S-50	50	$1, 1\frac{1}{4}$	24x36	72	1128	425.00

Use common barrel or sack salt for regenerating. A pint of salt is approximately one pound. Soap testing outfit and instruction card furnished with softener.

No. 150 Pitcher Spout Pumps



Has closed revolving top Valves trip by raising handle to extreme height, thus preventing freezing of the pump.

Unless otherwise ordered, all pitcher spout pumps will be fitted for iron pipe. If lead pipe connections or brass valve seats are wanted, an extra charge will be made.

Can be furnished with porcelain enameled cylinders when specified.

Str	oke, 4 in	ches; suct	ion, $1\frac{1}{4}$
inch.		PRICE,	
3.7	Cylinder	Iron	Brass-lined
No.	Inches	Cylinder	Cylinder
2	3	\$4.75	\$7.25
3	$3\frac{1}{2}$	5.25	8.00

No. 451 Hartley Bracket Pumps



No. 451 can be installed on wall at either end or side of sink. Spout and handle can be set at any angle. Requires no base. Stuffing box, pump rod and valve seats are of brass. Joints, lathe finished fiber gaskets.

Cylinder seamless brass tube; diameter barrel, 2½ inches; stroke of plunger, 4 inches; capacity, 10 gallons per minute; discharge, threaded ¾-inch hose.

Price, No. 451 each \$8.00

No. 453 Hartley Bracket Pumps



Can be attached to wall at any point in relation to the sink.

This pump is equipped with a spout and handle which can be turned in any direction. Delivers a continuous stream without force.

Cylinder seamless brass tube; diameter barrel, 2½ inches; stroke of plunger, 4 inches; capacity, 10 gallons per minute; suction tapped for 1¼-inch pipe; pump rod and valve seats of brass.

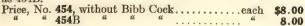
When necessary to fasten pump to baseboard, it can be furnished with an interchangeable post base, and is designated as 453B.

No. 454 Hartley Bracket Pumps

No. 454 has ¾-inch bibb cock opening for supplying water at sink and 1-inch pipe opening through which water can be raised 30 feet to overhead tank.

Cylinder seamless brass tube; diameter of barrel, 2½ inches; stroke of plunger, 4 inches; capacity, 10 gallons per minute; suction tapped 1½-inch pipe; plunger rod and valve seats are of brass.

When necessary to fasten pump to baseboard, it can be furnished with an interchangeable post base, and is designated as 454B.



No. 832 Horizontal Force Pumps

Double acting house force pump with brass valves, brass plunger rcd, brass packing gland, brass suction and discharge union connections, brass drain plugs and malleable iron lever. A drip pan is provided underneath stuffing box so any possible drip may be piped away from pump. Air chamber can be reversed so discharge may be used on either side.

Size No		1	2
Diam. Cyl	in.	$2\frac{1}{2}$	3
Stroke	- 44	. 5	5
Suction	"	$1\frac{1}{4}$	11/4
Discharge	- 44		$\frac{1\frac{1}{4}}{1\frac{1}{4}}$
Approx. Wt	lbs.	55	63
Price, Iron Cvl	. each	\$16.00	\$18.00
" Brass Lined	Cyl.	,	,
	each	18 00	21 00



No. 834 Horizontal Force Pumps



Ratchet pneumatic double acting house force pump with brass packing gland, brass drain plugs, malleable iron lever and automatic air intake valve for use with pneumatic water supply systems. All valves are located on one side of pump and are easily accessible by removing side plate, without disturbing balance of pump.

Approx. Wt lbs. Price, Iron Cyl each	\$16.00
Discharge	11/4
Suction	11/4
Stroke	41/2
Diam. Cyl. in.	4 3
Size No	

No. 869 Barnes Hand Diaphragm Trench Pumps



No. 869, side suction hand diaphragm trench pump for handling muddy and gritty water, sewage or semi-fluids. Particularly adapted for draining excavations, trenches, sewers, etc. The rubber faced metal valves are easily removable. The wrought iron lever may be used either vertically or horizontally, from either side of the pump.

The capacity depends entirely upon how fast it is operated.

Hose, hose bands and strainer are extra.

No. 1 2 3	Suction Iron Pipe Threads, In. $2\frac{1}{2}$	Approx. Capacity per Hour, Gals, 1000–1800 2000–3500 4000–6000	Price Each \$20.00 26.00 48.00
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Clayton Mark Brass Jacket Drive Well Points



Point before Gauze and Jacket are Put on

Made of standard wrought iron pipe, galvanized. Punched with elliptical holes of uniform size, equal distances apart. Has largest number of holes possible, retaining the strength required for driving. Pipe is galvanized after holes are punched. Driving plug is malleable iron swaged into pipe and riveted. Covered with brass wire cloth protected by heavy sheet brass perforated jacket.

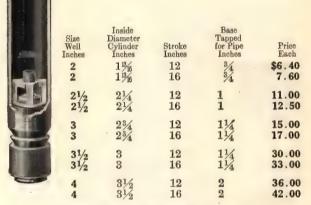
rivete			red with b		re cloth	protec	eted by	heavy
sheet	bras Size	s pe	rforated ja	cket.	PRICE I	er Dozen		
**	Pipe	LGTH.	IN.		GAU	GE No		
No. 74	In.	24	Jacket 60 18 \$33.0 \$	70	\$46.0	90 \$52.0	\$62.0	\$74.0
76	1	30	24 42.0	49.0	56.0	64.0	78.0	94.0
78	1	36	30 51.0	59.0	66.0	76.0	94.0	114.0
80	1	42	36 60.0	68.0	76.0	88.0	120.0	134.0
82	1	48	42 69.0	78.0	86.0	100.0	136.0	154.0
84	1	54	48 78.0	87.0	96.0	112.0	152.0	174.0
86	1½ 1¼	$\frac{20}{24}$	14 30.0 18 36.0	36.0 44.0	42.0 52.0	50.0 60.0	64.0 80.0	80.0
90 94	1	30	24 46.0	55.0	64.0	75.0	100.0	105.0 130.0
98	11	36	30 56.0	66.0	76.0	90.0	120.0	155.0
100	11	42	36 66.0	77.0	88.0	105.0	140.0	180.0
102	14	48	42 76.0	88.0	100.0	120.0	160.0	205.0
106	14	54	48 86.0	99.0	112.0	135.0	180.0	230.0
110	14	60	54 96.0	110.0	124.0	150.0	200.0	255.0
112	14	66	60 106.0	121.0	136.0	165.0	220.0	280.0
114	14	$\begin{array}{c} 72 \\ 24 \end{array}$	66 116.0 18 48.0	$132.0 \\ 57.0$	148.0 65.0	180.0 78.0	240.0 94.0	305.0
136 140	1½ 1½	30	24 60.0	70.0	80.0	96.0	118.0	112.0 139.0
144	1 2	36	30 72.0	84.0	95.0	114.0	142.0	166.0
146	$1\frac{1}{2}$	42	36 84.0	97.0	110.0	132.0	166.0	193.0
148	11/2	48	42 96.0	111.0	125.0	150.0	188.0	220.0
150	13	54	48 108.0	124.0	140.0	168.0	204.0	247.0
152	$1\frac{1}{2}$	60	54 120.0	138.0	155.0	186.0	228.0	274.0
154	11	66	60 132.0	151.0	170.0	204.0	252.0	301.0
156 160	$\frac{1\frac{1}{2}}{2}$	$\begin{array}{c} 72 \\ 24 \end{array}$	66 144.0 18 75.0	165.0 85.0	185.0 94.0	222.0 110.0	276.0 130.0	328.0 150.0
164	2	30	24 90.0	101.0	112.0	132.0	160.0	185.0
168	$\tilde{2}$	36	30 105.0	118.0	130.0	154.0	190.0	220.0
170	2	42	36 120.0	134.0	148.0	176.0	220.0	255.0
172	2	48	42 135.0	151.0	166.0	198.0	250.0	290.0
174	2	54	48 150.0	167.0	184.0	220.0	280.0	325.0
176	2	60	54 165.0	184.0	202.0	242.0	310.0	360.0
178	2	66	60 180.0	200.0	220.0	264.0	340.0	395.0
180	$\frac{2}{2}$	72 78	66 195.0 72 210.0	217.0 234.0	238.0 256.0	286.0 308.0	370.0 400.0	430.0 465.0
180 ¹ / 182	$\frac{2}{2}$	84	78 225.0	251.0	274.0	330.0	430.0	500.0
1821		90	84 240.0	268.0	292.0	352.0	460.0	535.0
1831	62	96	90 255.0	285.0	310.0	374.0	490.0	570.0
183	$2\frac{1}{2}$	30	24 155.0	175.0	195.0	220.0	250.0	290.0
184	21/2	36	30 180.0	205.0	230.0	260.0	300.0	350.0
188	$2\frac{1}{2}$	48	42 230.0	265.0	300.0	340.0	400.0	470.0
192	$\frac{2\frac{1}{2}}{2}$	60	54 280.0	325.0	370.0	420.0	500.0	590.0
196	$\frac{2^{\frac{1}{2}}}{2^{\frac{1}{2}}}$	72 84	66 330.0 78 380.0	385.0 445.0	440.0 510.0	500.0	600.0	710.0
197 199	$\frac{2\frac{1}{2}}{2\frac{1}{2}}$	96	90 430.0	505.0	580.0	580.0 660.0	700.0 800.0	830.0 950.0
200	3	36	30 240.0	275.0	310.0	340.0	410.0	490.0
204	3	48	42 300.0	345.0	390.0	430.0	520.0	630.0
208	3	60	54 360.0	415.0	470.0	520.0	630.0	770.0
212	3	72	66 420.0	485.0	550.0	610.0	740.0	910.0
214	3	84	78 480.0	555.0	630.0	700.0		1050.0
215	3	96	90 540.0	625.0	710.0	790.0		1190.0
202 206	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$	36 48	30 300.0 42 360.0	345.0 415.0	390.0 470.0	430.0 520.0	630.0	610.0 750.0
210	$\frac{3^{\frac{1}{2}}}{3^{\frac{1}{2}}}$	60	54 420.0	485.0	550.0	610.0	740.0	890.0
213	$\frac{3_{2}^{2}}{3_{2}^{1}}$	72	60 480.0	555.0	630.0	700.0		1030.0
218	31/2		72 555.0	640.0	725.0	805.0		1170.0
219	31/2	96	84 630.0	735.0	820.0		1070.0	
216	4	48	36 480.0	520.0	560.0	600.0	700.0	810.0
220	4	72	60 630.0	695.0	760.0		1000.0	
224	4	96	84 780.0	870.0			1300.0	
228 D	4		108 930.0					2010.0
P.	iease	orde	er by numb	er, stat	ing mes	n or gar	uze.	

No. 452 Eureka Taper Point Tubular Well Cylinders

Has taper point with a rubber packer. Is seated without the use of a seating tool, by forcing the taper point into a turned coupling, expanding the rubber packer and making a tight joint.

The cylinder can be lowered and withdrawn by screwing pipe into its base, which is tapped to receive it.

The list gives the sizes of pipe for which the cylinder bases are tapped.



Western Style Check Valves





Made with brass cage and poppet, with rubber facing. A quick closing valve which is more efficient and more durable than the leather hinge valve.

The Western Style Check Valve is desirable in large size cylinders on account of its quick closing permitting of a larger opening through eap.

Size of	PRICE	EACH	Size of	PRICE,	
Cylinder	Outside	Inside	Cylinder	Outside	Inside
Inches	Cap	Cap	Inches	Cap	Cap
2	\$.40	\$.50	$3\frac{1}{2}$	\$.50	\$.70
21/4	.40	. 50	4	. 50	1.00
21/2	.40	, 60	$4^{1/2}$. 80	1.00
23/4	.40	. 60	5	1.20	1.50
3	. 50	.70	6	1.50	2.00
31/4	.50	.70	8	2.50	4.00

Style AM Oshkosh Cylinder Plungers



One-leather all iron plunger, used in all iron cylinders 10 inches long, and longer cylinders where single leather plungers are specified.

Inches 21/2	Each \$1.00	Inches 3½	Each \$1.20
$\frac{2^{1/2}}{3}$	1.00	4	1.60

No. 535 Clayton Mark Vertical Iron Check Valves

Tapped for standard pipe thread. Size PRICE, EACH Pipe, In. Plain Galv. Size PRICE, FACH Pipe, In. Plain Galv. 3/4 \$1.50 \$2.00 2 \$3.00 \$4.50 1.75 2.25 21/2 4.25 6.00 2.00 2.75 3 6.00 10.00

3.50

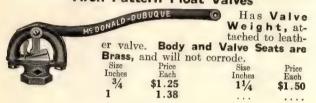


2.50

No. 530 Iron Horizontal Check Valves

Size Pipe In.	Price, Black	Each Galv.	Size Pipe In.	Price Black	, Each Galv.
3/4 1 11/4 11/2	\$1.00 1.25 1.50 2.00	\$1.50 1.75 2.25 3.00	$\frac{21/2}{3}$	\$2.75 6.00	

Arch Pattern Float Valves





Water Conductors

Designed for the purpose of conducting water from the spouts of pumps to troughs and tanks situated in different parts of the farm or yard. The swivel arrangement allows it to be swung in different directions without removing from spout or pump.

Size	inches.	11/4 or 11/2	2
Price	each	\$.60	.72

Wood Rod Couplings

Two, Three or Four-Hole



These couplings are made with a socket for the ends of the rod to be driven into, to prevent splitting.

No.	For Rods Inches	No. Holes	Pipe Thread Inches	Price	E, PER SET Galvanized
430	1 and 11/8	2	8/2	\$.40	Grant Manager
432	1 " 11/8	2	3/8		\$.48
435	1 " 11/8	3	3/8	.48	.60
436	11/4 " 13/8	3	1/2	.75	1.00
437	11/2 " 13/4	4	3/4	2.25	2.85

Hexagon Pump Rod Couplings

No.	Size Rods Inches	Threads to Inch	PRICE, PER POUND Black Galv. Brass	
720 722 724	3/8 3/8	14 regular 16 to order 12x14	\$.32 \$.40 \$1.00 .32 .40 1.00 .32 .40 1.00	MARK
726 728 730	7/6 1/2 1/2 X 7/6	12 12 12 12 12	. 2 . 40 1.00 . 32 . 40 1.00 . 32 . 40 1.00	

Common Valve Leathers

For Pump Cylinders



Size Inches 2 21/4 21/2 23/4	Price per Dos. \$.80 1.00 1.30	Size Inches 3 3 1/4 3 1/2	Price per Dos. \$1.80 2.00 2.40	Size Inches 4 ¹ / ₂ 5	Price per Dox. \$4.00 6.00
23/4	1.50	4	3.00		

Cupped Plunger Leathers

For Pump Cylinders



3/4 1 1 ¹ / ₄ 1 ¹ / ₂ 1 ⁵ / ₈	\$.40 .50 .60 .70 .80	$\begin{array}{c} 2\\ 2^{1/4}\\ 2^{1/2}\\ 2^{3/4}\\ 3\\ 3^{1/4} \end{array}$	\$1.00 1.20 1.40 1.70 2.00	3½ 4 4½ 5	\$2.80 4.00 5.00 7.20
74			2.40 ers Suction	Strain	ners

	_		
Size Inches 11/4 11/2 2 21/2 3	Plain \$.35 .50 .65	PRICE, EACH Galva- nized \$.55 .60 .85 3.50	*Galva- nized \$.80 .90 1.20 4.00
*Gauze	1.50 covered.	4.25	6.00

No. 618 Malleable Iron Drive Caps

This cap is especially designed for driving pipe and well points. Size, Pipe Inches $\begin{array}{c|cccc} Each & Size, Pipe Inches & Siz$



No. 419 Cast Steel Drive Shoes

This shoe is made of steel casting and is stronger than the malleable shoe. It is furnished both finished and rough, the finished shoe being turned true both inside and outside.



Size Pipe Inches	PRICE. Rough	EACH	Size Pipe	PRICE,	
		Finished	Inches	Rough	Finished
$1\frac{1}{2}$	\$.80	\$1.00	41/2	\$3.75	\$6.00
2	.80	1.00	5	4.25	7.00
21/2	1.10	1.30	*55/8	6.50	9.00
3	1.50	2.00	6	6.50	9.00
31/2	2.50	3.50	8	8.00	12.00
4	2.75	4.00	10	12.50	18.00
*For t	well casing	z .	12	25.00	35.00

No. 1560 Goulds Improved Pumping Jacks



A geared power attachment which can be used to connect any windmill pump standard by belt to any source of power.

All that is necessary in attaching the jack is to clamp it to the standard near the base, disconnect the pump lever, and bolt the crosshead to the windmill rod.

The pump can then be operated by hand, windmill or engine as desired, by changing one pin and adjusting the crosshead or lever on the pump rod.

The stroke is adjustable, 6, 8 or 10 inches, by changing the wrist pins in the wheels.

The jack is geared 5 to 1.

The pinion is covered with a guard.

The position of the gears is such as to eliminate side thrust on the plunger

When ordering jack, always specify number of pump with which is to be used.

			Size of		
	Stroke		Tight and Loose	Weight	Jack Only
No.	Adj. Inches	Geared	Pulleys	Pounds	Price, Each
1560	6, 8 and 10	5 to 1	$12x2\frac{1}{2}$	94	\$16.50

Goulds Improved Hydraulic Rams

The hydraulic ram is a selfacting pump which utilizes the momentum of a fall of water to force a part of the water to an elevation many times as high as the fall used to operate the ram. The simplicity, effectiveness and durability of this machine make it one of the most useful as well as the most economical of the equipments available for forcing water to distant and elevated points.

A slight fall only is required to operate the ram, but as the amount

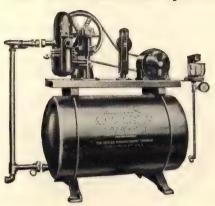
of fall is increased its operation becomes more powerful, and it will force the water in a proportionately larger flow or to a proportionately higher elevation. The amount of water delivered, or the proportion of the water raised to the amount wasted in operating the ram, varies with the amount of fall and height to which it is elevated. An increase in the available fall or a decrease in the height the ram has to elevate the was er will cause a corresponding increase in the amount of wate. delivered by the ram.

Ram has rubber disc valve on bronze grid seat with cylindrically wound spring below air chamber.

No.	Size No.	Supply Gallons per Minute to Operate Ram	Pipes Drive	, In. Discharge	Approx. Weight Pounds	Price Each
1701 1701	$\frac{3}{4}$	2 to 4 3 " 7	11/4	1/2 8/4	35 53	\$17.75 23.00
1702 1703	5 6	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{2}{2\frac{1}{2}}$	1 1¼	$\begin{array}{c} 94 \\ 165 \end{array}$	28.25 45.00

*No. 1701 fitted for either iron or lead pipe.

No. X-210 Autowater Systems



The Autowater is an independent water supply system—a complete unit, assembled and ready for immediate connection to house piping and electric wiring. Current supplied either from central station or farm lighting plant. This outfit will supply running water under pressure automatically at the rate of 210 gallons per hour.

The system has been designed and built for service in hard water cities, towns and outlying districts where soft water is desired. It is capable of furnishing liberal quantities of running water for the average six room house including bath room with tub bath, and the usual other fixtures in the kitchen and laundry.

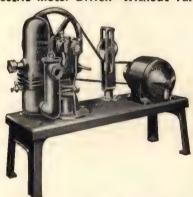
In average suburban, village or country homes not directly supplied from a central water supply station, this system will

supplied from a central water supply station, this system will give the equivalent of city water service.

Suction, ³/₄ inch. Discharge, ³/₄-inch. Maximum suction lift, 22 feet. Maximum working pressure, 43 pounds. Overall dimensions, 48x20x41 inches. Shipping weight, 270 pounds.

Prices upon application.

No. W-210 Pumping Units Electric Motor Driven-Without Tank



This electrically driven pumping outfit will draw water automatically from cisterns, shallow wells, springs, streams and lakes at the rate of 210 gallons per hour.

Recommended for those who have their own tanks, either pneumatic or open or for replacing water motors, etc.

By use of a pressure regulator or a float switch, this outfit is equipped to work automatically either on open or pneumatically either on open or pneumatic equipment of the entire that the entire the entire that expenses the entire that expe matic tanks. A pressure regulator is furnished with this pump. An automatic float switch at extra cost.

Complete outfit consists of: Single acting, outside packed plunger pump; ¼-horse power electric motor; belt idler; 1-inch fat leather belt; heavy oak base with cast iron legs; air attachment; automatic, double-pole electric pressure regulator starts and stops motor. Set to start at 23 pounds and stop at 43 pounds, relief valve.

In ordering give current specifications.
Suction, ¾ inch. Discharge, ¾ inch. Maximum suction
lift, 22 feet. Maximum working pressure, 43 pounds. Overall dimensions, 33x13x25½ inches. Weight, 146 pounds.

Prices upon application.

Goulds Autowater Deep Well Pumping Outfits

Outfits Y, YA and YB

Electric and Engine Driven-For Open Tank Service

Capacity, 150 Gallons per Hour



Outfit Y is equipped with a ¼-horsepower motor and is used where the source of water is more than 22 feet below the suction inlet of the pump, but not greater than 50 feet. Total head not to exceed 150 feet.

Outfit YA is equipped with a ½-horsepower motor and is used where the water is more than 50 feet but not greater than 100 feet below the suction inlet. Total head not to exceed 200 feet.

Outfit YB is same as outfit YA except that it is fitted with a ½-horsepower, 4-cycle gasoline engine instead of electric motor.

When connected up to an open tank and plumbing lines, these outfits will supply running water in the average suburban or farm home sufficient for the customary needs of laundry, kitchen and bathroom. These outfits, which are recommended mainly to purchasers who have open tanks, can be equipped to operate automatically by the use of an automatic float switch, furnished at an extra cost. For cold climate localities an anti-freeze attachment is furnished which enables the water to be carried through underground pipes below frost line to point of destination. This attachment is extra.

Furnished with No. 1697 pumping head with 4-inch stroke. Machine cut gear and pinion. Bearings lubricated from large oil pockets, from which oil is carried by means of wicks. Electric motor is of repulsion-induction type of standard make with surplus power. Has floating idler requiring neither oiling nor other attention. Belt is flat, weatherproof leather, endless. Base is of heavy wood, waterproofed. Has No. 1708 cylinder with brass body; of single-acting type. Size, $2\frac{1}{4}x4$ inches. Suction opening for 1-inch pipe. Top cap tapped for $2\frac{1}{2}$ -inch pipe.

pipe.
Complete outfit is mounted on wood base and shipped completely assembled. Cylinder separate. Purchaser must supply connecting pipe and well rod. Pipe sizes: drop pipe, 2½-inch; discharge opening, 1½-inch. Bushed for smaller size drop pipe at no extra charge. Head and cylinder fitted for ½-inch rod.

Shipping weights: outfit Y, 259 pounds; outfit YA 290 pounds; outfit YB, 290 pounds.

When ordering give current specifications. If direct current, the voltage; if alternating current, the voltage, cycles and phase.

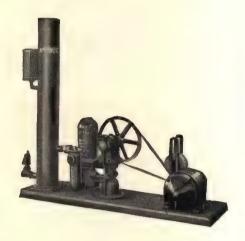
Price, Outfit Y, Including Repulsion-induction
Motor of 110 or 220 Volts, 60 Cycles, Alternating
Current, or 32 or 110 or 220-volt, Direct Current
....each
Price, Extra, for 25-cycle Repulsion-induction Motor

each	8.50
Price, Outfit YA, Including Repulsion-induction	
Motor of 110 or 220 Volts, 60 Cycles, Alternating	
Current, or 110-volt, Direct Current each	145.00
Price, Extra, for 25-cycle Repulsion-induction Motor	
each	33.00
TO CONTRACT TO THE TOTAL TO THE TOTAL TOTA	

Price, Outfit YB, Same as YA except Gasoline Engine
Driveneach 190.00

No. W-4 Goulds Motor Driven Automatic Oiling Autowater Pumping Outfits

Capacity-210 Gallons per Hour



This electrically driven pumping outfit is for installation where water is desired direct from the well. The tank is not intended for storage but to act mainly as a cushioning chamber for the automatic regulator. The efficient design of this chamber and piping minimizes the possibility of water logging which is one of the principal difficulties of all other small-tank, fresh-water systems.

The unit as furnished is completely assembled and ready for immediate connection to house piping and electric wiring. It is suitable for pumping water from cisterns, shallow wells, springs, streams and lakes at the rate of 210 gallons per hour, where running water is desired for household use, including limited quantities of water for sprinkling purposes.

It is recommended particularly for: Small homes, summer cottages, camps, yachts, etc; where a modern and up-to-date electric pump is desired that will furnish the equivalent of city water service at a small cost and with little attention.

A pressure regulator which is furnished with the outfit makes this system entirely automatic in operation. A relief valve is also included.

Average operating cost: 2 to 4 cents per day.

Complete outfit includes: Goulds Fig. 1695 pump, 210-gallon, single-acting, outside packed, plunger type and automatic oiling; electric motor, ¼ h.p. repulsion-induction a.c. or compound wound d.c. of standard make; belt tightener with floating pulley, requires neither oiling nor other attention; 1-inch flat, endless, water-proof leather belt; heavy oak base; air attachment of simple construction, no working parts; automatic, double-pole electric pressure regulator starts and stops motor, set to start at 23 pounds and stop at 43 pounds; standard spring type relief valve; welded steel cushioning chamber.

In ordering, give current available. If d.c., the voltage; if a.c., the voltage, cycles and phase.

OutfitNo.	W-4
Suction, Pipe Size inches	3/4
Discharge, Pine Size inches	$\frac{\frac{3}{4}}{\frac{1}{2}}$ $42x13x50$
Over All Dimensions inches	42x13x50
Maximum Working Pressure	43
Maximum Suction Lift.	22
Capacity per Hourgallons	210
Shipping Weightpounds	190

Prices upon application.

No. 3034 Goulds Electric Centrifugal Sump Pumps

Horizontal Type



Electric current is used only when the pump is running.

This outfit is equipped with a special priming chamber which makes the unit entirely self-priming when used for suction lift not over $3\frac{1}{2}$ feet.

Minimum diameter of the drainage pit is $13\frac{1}{2}$ inches.

Pump.—Single stage, single side suction horizontal centrifugal pump in standard fitted or bronze fitted construction. The diameter of the discharge is 1 inch. The pump shaft is connected to motor shaft by flexible coupling.

Motor.—110-220-volt, 60-cycle, a. c., 1750 r. p. m.; 110-220-volt, 25-cycle, 1450 r. p. m.; 110 or 220-volt d. c., 1750 r. p. m. motors can be furnished with this outfit if desired.

SWITCH.—Double pole type mounted on bracket on suction pipe, all working parts completely enclosed.

FLOAT.—Copper float and brass rod actuate the automatic switch.

Capacities and Heads with 1/4 H.P., 1450 R.P.M. Motor

Gallons		 ,			 							.]	o e	er	minute	10
*Total Head	4 4							٠			٠				feet	10

Capacities and Heads with 1/4 H.P., 1750 R.P.M. Motor

Gallonsper min *Total Headf	ute 20
*Total Head	eet 20

*Total head equals distance from water level to point of discharge plus pipe friction.

Price, No. 3034, with Float Switch and ¼ H. P.,
1750 R. P. M., 60-Cycle Single Phase, 110-220-
Volt Alternating Current, or 110-Volt Direct
Current, or 220-Volt Direct Current Motor.
Bronze Fittedeach
Price, No. 3034, with Float Switch and 1/4 H. P.,
1450 R. P. M., 26-Cycles, Single Phase, 110-220-
Volt Alternating Current Motor, Bronze Fitted

of Alternating Current Motor, Bronze Fitted each 106.25

\$92.00

Figure 3029 Goulds Electric Centrifugal Sump Pumps



A completely assembled unit built in one size. When sump is full the float rises and actuates switch which in turn starts the motor. When sump is drained, the float falls and motor is stopped.

Electric current is used only when pump is running.

The pump is always submerged and ready to start. No priming necessary.

Can be used as boiler feed pump for low pressure boilers; in condensation service for returning miscellaneous drainage to hot well; as a transfer pump, for automatically draining vats, transferring liquids, etc.

Has a cast iron volute casing.

Open type bronze impeller. Tobin bronze shaft, and cast iron strainer.

Pump is suspended by 2½-inch steel pipe. The pit cover is 20 inches in diameter and fits into the bell of a standard 18-inch sewer tile. Pit depth, 24 inches. The pump shaft is supported by a self-aligning ball thrust bearing mounted in dustproof housing and lubricated by grease cup. Pump-shaft is connected to motor shaft by flexible coupling. Discharge pipe, one inch.

Has ¼ horsepower vertical type drip proof mounted on pit cover. Motor shaft transmits torque only and does not carry any weight of pump parts. The following motors can be furnished. For single phase: Repulsion type; 110 or 220 volt; 60 cycle; 1750 r.p.m. and 25 cycle 1450 r.p.m.

For 2 or 3-phase: Can be operated on 1-phase or 2 or 3-phase circuit. For direct current: Compound wound type; 110 volts; 1750 r.p.m. Switch is a double pole type mounted on pit cover, all working parts entirely enclosed.

Copper float and brass rod actuate the automatic switch.

Capacities and Heads with 1/4 H.P., 1750 R.P.M. Motor

Capacities and Heads with 1/4 H.P., 1450 R.P.M. Motor

~ 1		10	45	0.0	0.5	20
Gal	per min.	12	10	20	20	30
Head	feet	15	14	13	11	8

Figure 3029, No. 0, has a brass fitted pump including float switch.

Description App	rox., S	hip. Price Each
Pump Has 1/4 H.P., 1750 R.P.M., 60 Cycle, 110		
or 220 Volt Interchangeable, Single Phase, Alternating Current Motor	135	\$140.00
Pump Has ¼ H.P., 1750 R.P.M., 110 Volts, Compound Wound, Direct Current Motor.	135	140.00
Pump Has ¼ H.P., 220 Volt, 1750 R.P.M., Compound Wound, Direct Current Motor.	135	140.00
Pump Has ¼ H.P., 1450 R.P.M., 25 Cycle,110 or 220 Volt Interchangeable, Single Phase		
Alternating Current Motor	140	147.00

No. 1 Evinrude Centrifugal Pumps



The No. 1 Evinrude Centrifugal Pump fills the need for a light, compact, easily portable pumping unit capable of hand-ling large quantities of water to or from the job, clearing

trenches or excavations, supplying tanks, etc.

If desired, the pump can be set down in the excavation and the base submerged in the water. When used in this way no suction pipe is required and there is no need of priming.

Head in Feet	Capacity Gallons per Hour	Speed R. P. M.	With 2 H. P. Evinrude Power Plant Price, Each
0	6800	835	\$150.00
5	6575	865	150.00
10	6150	895	150.00
15	5650	920	150.00
20	5000	950	150.00
25	4175	980	150.00
30	3275	1010	150.00
35	1200	1040	150.00

No. 3004 Goulds Centrifugal Pumps Direct Connected to Electric Motor Single Stage, Single Suction



The discharge nozzle is same size as the suction nozzle. Suitable for moderate heads as follows:

No. 1 is limited to 25-foot head.

No. 11/2 is limited to 50-foot head.

Can be furnished standard fitted, brass fitted, or brass.

These brass pumps have all parts which come in contact

with the liquid made of brass.

Brass fitted construction should always be used where pumps are to be used for handling hot water.

Ratings are based on pumping clear, cold water.

No. Suction 1 1 1½ 1½ 2 Prices upon applica	Discharge 1½2	Capacity, Gallons per Minute 30 70	Shipping Weight, Pounds 125 200
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rrices upon application.

American-Marsh Centrifugal Automatic Boiler Feed Pump and Receiver

Horizontal Pattern, for Low Pressure Heating Systems

Motor Driven



The pump and tank are mounted on a heavy cast-iron drip pan which catches the drips from the entire unit. The tank is made of close grained cast-iron and is firmly mounted on two cast-iron legs. The pump casing is of the overhanging type and may be turned so that the discharge may be taken in any direction desired. The pump and motor are connected by a flexible coupling and the bearing is babbitted and equipped with thrust collar.

Standard receivers are mounted on legs 12 inches high. If low tank is desired, they can be mounted on legs 2 inches high,

as shown by illustration.

Regulations relative to the use of starters or accelerating switches vary in different localities, but any make of starter specified by the customer can be furnished at an extra charge. Ordinary starters are not required on motors of 3 h.p. or less. The use of compound wound motors is strongly recommended for this service. When the customer furnishes his own motor same should be sent for mounting and testing.

Size	Radiation	0.1	3.6			
of	Surface	Gal.		DEL'Y	SPI	
Pump	in Sq. Ft.	per Min.		SSURE	R.P.	
3/AMR			Lbs.	Ft.	Min.	Max.
	2000 to 3500	10	8	18	1400	2330
3/4BMR	5000 " 7000	10	10	23	1600	2500
1 AMR	7000 " 12000	25	5	11.5		
1 AMR.	7000 " 12000		-		1200	1800
1 BMR		25	10	23	1600	2500
	1000 12000	25	15	35	1450	2350
1 BMR	7000 " 12000	25	20	46.	1660	2650
11/2AMR	12000 " 30000	60	5	11.5	840	
11/2AMR	12000 " 30000	60				1400
11/2AMR			10	23	1200	2000
	12000 30000	60	15	35	1450	2320
$1\frac{1}{2}$ AMR	12000 " 30000	60	20	46	1660	2650
11/2BMR	25000 " 50000	70	25	58	1270	1905
11/2BMR	25000 " 50000	70	30			
11/2BMR				70	1360	2040
1 72DM11	25000 " 50000	70	35	81	1450	2175

Size		Ster o	F Rec'r.	ću:	***
of	H.P.		HES	Size	Weight Less
Pump	of Motor	Width	Lgth.	Inlet Inches	Motor
3/AMR	1/		-		Pounds
	72	16	32	$2\frac{1}{2}$	550
3/4BMR	1/2	16	32	21/2	600
1 AMR	3/4	16	32	21/2	650
1 AMR	3/4	16	32	21/	
1 BMR	1 2	16	32	272	650
1 BMR	11/			2/2	900
	$1\frac{1}{2}$	16	32	$2\frac{1}{2}$	900
11/2AMR	1	20	41	4	1200
$1\frac{1}{2}AMR$	$1\frac{1}{2}$	20	41	$\hat{4}$	1200
11/2AMR	$1\frac{1}{2}$	20	41	-	
11/2AMR				4	1200
	2	20	41	4	1200
11/2BMR	3	20	41	4	1450
$1\frac{1}{2}BMR$	5	20	41	4	1450
11/2BMR	5	20	41	4	
- /2-11110	0	20	41	4	1450

Capacity rating above is for direct radiation. Where the indirect (fan blast) system is used one-sixth of the above rating should be used.

Prices upon application,

American-Marsh Automatic Boiler Feed Pump and Receiver



Sizes 1A to 4A inclusive

The simplicity of the valve makes it practically impossible for it to get out of order.



Sizes 5A to 9A Inclusive

These outfits are furnished complete as illustrated, all self-contained on a substantial sub-base ready to connect to piping.

Capacity rating is for direct radiation; where the indirect, fan blast, system is used, make allowance for increased condensation.

The pumps described will operate on as low as 30 pounds pressure.

Low pressure outfits can be furnished when desired to operate on from 8 to 20 pounds of steam.

-										
	CYL. S				PIPE S	IZES.	In	DRAINING		Wt.
No.	Steam	Water	Stroke	Steam	Exh'st	Inlet	Deliver	y Sq. Ft.	1-in. Pipe	Lbs.
*1A	$2\frac{1}{2}$	$1\frac{3}{8}$	2	1/4	3/8	2	1/3	1000	3000	310
*2A	3	$1\frac{3}{4}$	21/2	3/8	1/2	2	3/4	2000	6000	340
*3A	4	$2\frac{3}{8}$	3	3/8	3/4	2	3/4	3000	9000	600
*4A	5	3	$3\frac{1}{2}$	1/2	3/4	2	1	4500	13500	650
5 A	5	3	6	1/2	3/4	2	11/4	7500	22500	1050
6 A	$5\frac{1}{2}$	$3\frac{1}{2}$	6	3/4	1	2	$1\frac{1}{2}$	9000	27000	1100
7 A	6	35/8	8	3/4	1	$2\frac{1}{2}$		13000	39000	1150
8 A	6	4	8	3/4	1	21/2	2	15000	45000	1160
9 A	7	4	8	1	11/4	21/2	2	15000	45000	1220
10A	8	5	10	1	$1\frac{1}{2}$	$3\frac{1}{2}$	21/2	27000	81000	3080
11A	10	6	12	11/4	$1\frac{1}{2}$	4		40000	120000	3200
12A	12	$7\frac{1}{4}$	12	11/2	2	5	4	65000	195000	3390
13A	12	8	12	11/2	2	5	4	70000	210000	3400

^{*}Equipped with Marsh valve gear.

Prices upon application.

Marsh Deep Well Pumping Engines Plain Yoke Base Type



This engine is simple and compact in construction and is especially adapted for service where a small, moderate priced deep well head is required. It is fully bronze fitted and cannot short-stroke, race or pound. Suitable regulating valves are furnished for equalizing the up and down strokes.

Unless otherwise ordered, flanges for well and delivery pipes will be threaded standard sizes as below. If wanted special, be careful to indicate size, and state whether pipe or casing thread is wanted, also if U. S. or other tubes are to be used.

If order includes both engine and pump cylinder, flange for engine base with same size pipe connection as top of water cylinder cap will be provided in all cases.

Piston rod couplings and water cylinder plungers are threaded standard U. S. pipe sizes, and sucker rods may be either made up of coupled pipe sections, or wooden rods may be used having suitable straps for attaching at ends to bucket and piston.

Diam. Steam Cylinder Inches	Stroke Inches	Steam Pipe Inches	Exhaust Pipe Inches	Well Rod Inches	Well Pipe Inches	Delivery Pipe Inches	Floor Space Inches	Weight Pounds
4	6	3/8	3/4	3/8	2	$1\frac{1}{4}$	8x 8	80
4	8	3/8	3/4	3/8	2	11/4	8x 8	85
5	12	1/2	3/4	1/2	$2\frac{1}{2}$	2	12x12	200
6	12	3/4	1	1/2	3	$2\frac{1}{2}$	12x12	250
6	24	3/4	1	3/4	3	$2\frac{1}{2}$	18x18	450
6	36	3/4	1	3/4	3	$2\frac{1}{2}$	18x18	500
7	24	1 *	11/4	3/4	3	$2^{1/2}$	18x18	480
7	36	1	11/	8/4	3	$2^{1/2}$	18x18	525
8	24	1	11/2	1	5	31/2	22x22	900
8	36	1 .	11/2	ī	5	$3\frac{1}{2}$	22x22	920
-		-	1: 1:		_	- / 4		
Pric	es upo	on app	lication					

American Plain Belted Power Pumps



				Dr	MENSIO	NS. INCE	HES			
Diam		Gal.	Max.	Suc-	Deliv-	. ,		Pulley	Floor	
Cyl.	Stroke	per	Head in	tion	ery	Diam.	Face	Speed	Space	Wt.
In.	In.	Min.	Feet	Pipe	Pipe	Pulley		R.P.M.	In.	Lbs.
3	6	16	350	2	$1\frac{1}{2}$	25	5	50	22x46	700
31/2	6	23	350	2	$1\frac{1}{2}$	25	5	50	22x46	750
3 3/8	6	25	350	2	$1\frac{1}{2}$	35	5	50	22x46	750
4	6	31	350	21	2	25	5	50	22x47	800
41/2	6	40	160	3	$2\frac{1}{2}$	30	5	50	22x48	850
5	6	50	160	3	$2\frac{1}{2}$	30	5	50	22x48	850
51/2	6	60	160	3	$2\frac{1}{2}$	30	5	50	22x48	850
6	6	71	160	3	$2\frac{1}{2}$	30	5	50	22x48	850
41/2	8	55	160	3	$2\frac{1}{2}$	30	5	50	22x60	1000
5	8	66	160	3	$2\frac{1}{2}$	30	5	50	22x60	1000
51/2	8	81	160	3	$2\frac{1}{2}$	30	5	50	22x60	1000
6	8	96	160	3	$2\frac{1}{2}$	30	5	50	22x60	1000
$6\frac{1}{2}$	8	110	160	$3\frac{1}{2}$	3	30	5	50	24x60	1200
7	8	130	160	31/2	3	30	5	50	24x60	1230
8	8	170	130	$3\frac{1}{2}$	3	30	5	50	24x60	1300
P	rices u	ipon	applica	ation	4					

Reliance Vertical Steam Boilers

For 100 Pounds Working Pressure



Built according to A. S. M. E. specifications, of open hearth, homogeneous, flange steel plates, having a tensile strength of 60000 pounds per square inch.

Made in the extended ash pit type only, as this type of construction is more convenient and durable than the cast iron base and ash pit used on most boilers.

Every boiler is provided with a stack, a complete set of high grade steam trimmings and fittings, as well as a steel bottom plate and hand holes above the flue sheet and mud ring. Will pass the inspection of any state or city except the state of Massachusetts and the city of Seattle. Special boilers to meet these inspections built to order on short notice.

Thick-Thick- FIREBOX, INCHES

ness ness In-Shell Heads Thick- side In. In. ness Diam. No. of Size
Two- Lgth. Safety
inch Tubes Valve
Tubes In. In.

Ht.

8/6 5/6 19 181/6 30 32 1

Submerged tube type built to order only.

Ht.

Over All In.

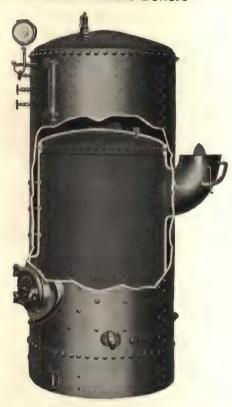
60

Diam. Ht. Horse Shell Boiler Power In. In.

5 24 501/2

8 10		59) 72		69 81 ¹ /	2 1/4 2 1/4	3/8	5/16 5/16	$\begin{array}{c} 25 \\ 25 \\ 25 \end{array}$	$\frac{1672}{22}$	40 40	36 48		
12 15 20		71 83 83		80 93 93	1/4 1/4 15/6	3/8	5/16 5/16 3/8	$31\frac{1}{2}$ $31\frac{1}{2}$ $35\frac{1}{2}$	27 30 30	60 63 84	45 54 54	$1\frac{1}{2}$	
25 30 35	$\frac{42}{42}$	89 95 89		$98 \\ 104 \\ 98$	5 16 5 16 15 16	3/8 3/8 3/8	3/8 3/8 3/8	$35\frac{1}{2}$ $35\frac{1}{2}$ $41\frac{1}{2}$	30 30 30	$90 \\ 90 \\ 120$	60 66 60	2 2 2½	
40	48	95		104	15/16	3/8	3/8	$41\frac{1}{2}$	30	132	66	3	
Horse Power	Globe	Cock	Diam Stack	Thick- ness k Stack Gauge 14	Trim- ings	LBS. Boiler 900 1500	\$3	Boiler Price Each	Deduct for Fittings \$24.00	Dedu- for Inject	OF	Deduct for Stack \$6.00)
10 12 15 20	11(00 1400)400(4	1 1 1 1 ¹ / ₂	14 14 15 16	14 14 14 14	200 250 300 350	1600 1850 2050 2750	4	12.00 194.00 564.00	28.00 28.00	6.0 6.0 6.0	00	8.00 10.00 12.00 14.00	
25 30 35	es 400 403 4	$1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$	16 18 18	14 14 14	450 600 600	3400 3800 4100	11	064.00 170.00 102.00	32.00 32.00 32.00	8.0	00	14.00 16.00 16.00)
40	1	$1\frac{1}{2}$	24	14	700	4700	15	30.00	36.00	8.0	0	18.00	J

Famous Flueless Boilers

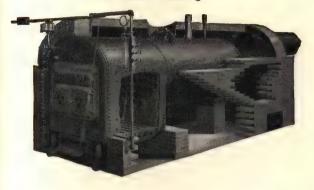


There are no flues to clean or replace. A good boiler for hard water. Built in strict accordance to the A. S. M. E. code and is regularly constructed for 100 pounds working pressure and tested to 150 pounds hydrostatic pressure. Boiler furnished complete with fire door and frame, ash door, grates, smoke collar with steel elbow and damper, and handhole plates complete with gaskets, bolt and arch. Fittings include pop safety valve, steam gauge and syphon, water gauge complete, gauge cocks, injector with check and feed valve and blow-off cock.

Horse-power 11/2 2 3 5 6 8 10 112 115 220 225 330	Diam. Boiler In. 20 20 24 24 26 30 30 34 36 42 44 48	Ht. Boiler In. 36 42 48 56 62 72 84 72 96 108 120	Depth Ash Pit In. 7 7 7 7 7 7 7 8 8 8 8 9 9	Ht. Boiler Over All, In. 43 49 55 63 69 79 91 80 104 104 117 129	Diam Fire Box In. 16 16 19 19 21 ¹ / ₂₄ 24 28 30 36 38 42	Fin Bo In 24 29 33 3 4 4 4 55	ness x Shell In. In. 14 4 5 6 6 2 1 4 4 5 6 6 2 5 6 6	Fire Box In. 5/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16	c. Thick. Top Head In. 388 388 388 388 388 388
Horse-power 1½2 2 3 5 6 8 10 12 15 20 25 30	Thick. Fire Box Head, In. 3/8 3/8 3/8 3/8 3/8 3/8 3/8 3/8 3/8	Size Safety Valve In. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Size Injector In. 3/8/3/8/3/8/3/8/3/4/3/4/3/4/3/4/3/4/3/4/	Size Water Gauge In. 3/8/8/8/8/8/8/8/1/2/2/1/2/2/1/2/2/1/2/2/1/2/2/1/2/2/1/2	Size Gauge Cock In. 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Size Blow Off In. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Size Smoke Outlet In. 6 6 6 6 10 10 10 10 12 12 12 12	Water Cap. Gals. 17 22 32 38 55 68 88 96 130 180 230 280	Ship. Wt. Lbs. 550 600 780 950 1100 1400 1650 1500 4200 5000

Prices upon application.

Kewanee Fire Box Boilers For Steam Water Heating



Kewanee Boilers have amply high fire-boxes; plenty of room in the combustion chamber for air and plenty of room for the air and heat-giving gases to mix. That is just one reason why they are so easy on the coal bill.

Built in accordance with American Society Mechanical

Engineers Code of Boiler Rules.

The list price on all brick-set boilers includes Century rocking grates, fire-door and frame, ash-pit front with ash door and draft doors, the necessary soot doors, bearing plates with expansion rollers for supporting boilers upon brick pier at rear of boiler shell. Firing tools include hoe, poker, slice bar and tube scraper.

Rear flue clean-out doors are furnished with all smokeless

boilers, brick-set type.

With all Kewanee Smokeless Boilers, brick-set type, are included extra clean-out doors and frames for side or rear walls.

Back arch bars and manhole shield are furnished with all brick-set boilers. Special fire-brick tile, to fit header, is furnished with all smokeless boilers. With portable type boilers is furnished all eastings for erecting the boilers, including east iron ash pit base for the smaller sizes.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks, steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains and angle

No trimmings of any kind are furnished with water boilers. Sufficient handholes are provided for cleaning purposes, and in brick-set boilers 42 inches in diameter and larger, and

in portable boilers 54 inches and larger, manholes are included.

and I	Capacity Steam Square	Capacity Water Square	Approxi- mate Weight	*Price Steam or Water Boiler	Price Extra for Steam Trimmings	Price Rear Flue Clean-out Doors and Frame
No.	Feet	Feet	Pounds	Each .	Each	Each
1 .	900	1500	2400	\$445.00	\$35.00	\$18.00
2	1050	1700	2700	500.00	35.00	18.00
3	1200	2000	2900	555.00	35.00	18.00
4	1400	2300	3300	610.00	35.00	22.00
5	1700	2800	3700	665.00	35.00	22.00
6	2000	3300	4200	720.00	40.00	22.00
8	2600	4300	5400	900.00	40.00	26.00
9	3000	5000	6000	980.00	50.00	26.00
10	3500	5800	6700	1050.00	50.00	32.00
11	4000	6600	7300	1150.00	80.00	32.00
12	4500	7400	8000	1250.00	80.00	32.00
13	5500	9100	10600	1570.00	95.00	38.00
14	6500	10700	11900	1760.00	95.00	38.00
15	7500	12400	14400	2200.00	125.00	46.00
16	8700	14400	16000	2425.00	125.00	46.00
17	10000	16500	17800	2750.00	150.00	60.00
18	11000	18200	19100	3100.00	160.00	60.00
19	12000	19800	21700	3400.00	160.00	70.00
20	14000	23100	23500	3700.00	160.00	70.00

*Maximum working pressure 15 pounds, also for water boiler. Castings and tools included.

Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon application.

Openings in fire box for coil, \$4.00 net per boiler.

Kewanee Fire Box Boilers

For Steam and Water Heating

Specifications

		Length	Width	Length	Height		
	Diam.	Boiler	Fire	Fire	Fire	Heating	Grate
	Boiler	Over All	Box	Box	Box	Surface	Area
No.	In.	Feet	In.	In.	In.	Sq. Ft.	Feet
1	30	65/12	24	26	35	113	4.4
2	30	$7\frac{1}{2}$	24	32	35	131	5.4
3	30	81/2	. 24	38	35	147	6.4
4	36	$7\frac{1}{2}$	30	32	38	180	6.8
5	36	9	30	. 38	38	215	8.0
6	36	$10\frac{1}{2}$	30	44	38	250	9.3
8	42	10	36	44	41	305	11.1
9	42	$11\frac{1}{2}$	36	50	41	350	12.6
10	48	$10\frac{1}{2}$	42	* 44	. 44	368	12.9
11	48	12	42	50	44	420	14.7
12	. 48	$13\frac{1}{2}$	42	56	44	472	16.5
13	54	$13^{11/1}2$	48	56	49	560	18.8
14	54	$16\frac{1}{2}$. 48	62	49	673	20.8
15	60	$15\frac{1}{2}$	53	62	54	743	22.9
16	60	18	53	68	54	873	25.1
17	66	16	59	62	59	954	25.5
18	66	18	59	68	59	1080	28.0
19	72	16	65	68	64	1167	30.8
20	72	18	65	74	64	1329	33.5

				Diam.	Diam.	Min. Ht.	
				Breeching	Stack	of Stack	Size
	Diam.	Diam.	Min. Ht.	Two	Two	Two	Steam
	Breeching	Stack	Stack.	Boilers	Boilers	Boilers	Opening
No.	In.	In.	Ft.	In.	In.	· Ft.	In.
1	12	12	40	18	18	45	4
2	14	12	40	20	18	45	4
3	16	14	40	22	20	45	5
-4	16	14	40	22	20	45	5
5	18	16	40	24	22	45	6
6	18	16	45	24	22	45	6
8	20	18	45	28	26	50	6
9	22	20	45	32	28	50	6
10	22	20	45	32	28	50	6
11	24	22	50	32	30	50	6
12	24	22	50	34	32	50	8
13	28	26	50	36	34	55	8
14	28	26	50	36	34	60	8
15	32	30	55	40	36	60	8
16	32	30	55	40	36	70	- 8
17	32	30	60	40	36	70	8
18	32	30	60	42	38 -	70	-8
19	. 36	34	60	44	40	70	8
20	36	34	60	46	42	70	. 8

Size Return In. 21/22 3 3 3 4 4 4 5 5 5 5 5 6 6 6	Size Safety Valve In. 1144 1112 1112 2 2 2 112 2 112 2 112 2 112 2 3 3 3 3	Height Water Line 1n. 52 52 55 55 55 581/2 61 61 66 66 75 75 80 80	Height from Floor to Top of Brick Work In. 70 70 77 77 77 77 77 83 83 99 99 99 99 99 96 96 108 108 114 114	Number of Common Briek 1450 1600 1750 1900 2150 2400 2650 2900 3000 3600 5300 5900 6500 7200 7200 7700	Common Brick for two Boilers 2450 2700 2950 3300 4100 4750 5350 5400 6450 8350 11350 12550 12400 13450
6	$3\frac{1}{2}$				
6	4	851/2	$\frac{114}{120}$	7700	13250
6	4	$85\frac{1}{2}$	120	8200	13850
	Return. 21/22 3 3 3 4 4 4 4 5 5 5 5 6 6 6 6	Size Return In. Safety In.	Size Return Valve Line In.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Smoke can be taken out at front if desired.

The Century Rocking Grate is furnished with these boilers. The grate is strong and durable and has an air space of 55 per cent. In boilers having fire box longer than 38 inches, the grate is made to rock in two sections each independent of the other.

Kewanee Smokeless Fire Box Boilers For Steam and Hot Water Heating

The sectional view above shows arrangement of double grates and long travel of gases. Recent tests of Kewanee Smokeless Boilers, made by a recognized boiler authority, prove that when burning soft coal, under conditions similar to those prevailing in most large buildings, their efficiency ranges from 73 to 81 per cent. The ordinary type heating boiler averages about 60 per cent efficiency.

The list price on all brick-set boilers includes Century rocking grates, fire-door and frame, ash-pit front with ash door and draft doors, the necessary soot doors, bearing plates with expansion rollers for supporting boilers upon brick pier at rear of boiler shell. Firing tools include hoe, poker, slice bar and tube scraper.

Rear flue clean-out doors are furnished with all smokeless boilers, brick-set type.

With all Kewanee Smokeless Boilers, brick-set type, are included clean-out doors and frames for side or rear walls.

Back arch bars and manhole shield are furnished with all brick-set boilers. Special fire-brick tile, to fit header, is furnished with all smokeless boilers. With portable type boilers are furnished all castings for erecting the boilers, including cast-iron ash pit base for the smaller sizes.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks; steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains, and angle valve.

No. 104 105 106	Capacity Steam Square Feet 1600 2000 2300	Capacity Water Square Feet 2600 3300 3800	Approximate Weight Pounds 4600 5100 5600	*Price Steam or Water Boiler Each \$835.00 900.00 965.00	Price Extra for Steam Trimmings Each \$40.00 40.00 45.00
107	2600	4300	6200	1080.00	45.00
108	3100	5100	6800	1155.00	45.00
109	3600	5900	7300	1230.00	55.00
110	4000	6600	8500	1385.00	90.00
111	4700	7800	9100	1510.00	90.00
112	5500	9100	9800	1635.00	95.00
113	6500	10700	12500	1960.00	100.00
114	7500	12400	13900	2175.00	115.00
115	8500	14000	16400	2700.00	135.00
116	10000	16500	18000	2920.00	155.00
117	11500	19000	20400	3350.00	165.00
118	13000	21500	22100	3650.00	165.00
119 120	$\frac{14000}{16000}$	$23100 \\ 26400$	$23800 \\ 25800$	4050.00 4350.00	165.00 200.00

*Maximum working pressure of 15 pounds, also for water boilers. Castings and tools included.

Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon application.

Openings in fire box for coil, \$4.00 net per boiler.

Kewanee Smokeless Fire Box Boilers For Steam and Hot Water Heating

			Specif	ication	S		
No. 104	Diam. Boiler In.	Length Boiler Over All Feet 87/12	Width Fire Box In.	Length Fire Box In. 45	Heating Surface Sq. Ft. 206	Area Upper Grate Sq. Ft. 5, 9	Diam. Breeching In. 20
105 106	36 36	$10\frac{1}{6} \\ 11\frac{7}{12}$	30 30	51 57	243 288	$7.2 \\ 8.4$	20 20 22
107 108 109	$\frac{42}{42}$	$9\frac{5}{6}$ $11\frac{1}{2}$ $12\frac{5}{6}$	36 36 36	54 60 66	297 345 393	$8.6 \\ 10.1 \\ 11.4$	22 22
110 111 112	48 48 48	$12\frac{1}{3}$ $13\frac{5}{6}$	42 42	66 72	425 480	$\begin{array}{c} 11.8 \\ 13.2 \end{array}$	24 24 27
113 114	54 54	$15\frac{1}{3}$ $15\frac{3}{4}$ $18\frac{1}{4}$	42 48 48	78 78 84	535 628 741	$15.0 \\ 17.1 \\ 19.1$	27 30 30
115 116 117	60 60 66	$17\frac{5}{6}$ $20\frac{1}{3}$ $18\frac{1}{3}$	53 53 59	90 96 90	839 973 1064	21.1 23.3 23.5	34 34 36
118 119 120	66 72	$\frac{20\frac{1}{3}}{18\frac{1}{3}}$	59 65	96 96	1194 1291	$\frac{25.9}{28.5}$	36 38
120	72	201/3	Diam. Breeching	102 Diam. s Stack	Min. Ht. Stack	31.3	38
	Diam.	Height	Two	Two	for Two	Steam	Size

			Diam.	Diam.	Min. Ht.		
		Minimum	Breechings	Stack	Stack	Size	
	Diam.	Height	Two	Two	for Two	Steam	Size
	Stack	of Stack	Boilers	Boilers	Boilers	Opening	
No.	In.	Feet	In.	In.	In.	Opening	Return
						In.	In.
104	18	45	26	24	55	5	3
105	18	45	26	24	55	6	3
106	20	45	28	26			
					55	6	3
107	20	50	28	26	60	6	4
108	20	50	30	28	60	6	4
109	22	50	32	30	60	6	
110	22						4
		50	32	30	60	6	4
111	24	55	34	32	60	6	4
112	24	55	34	32	60	8	5
113	28	60	36	34	70	. 8	5
114	28	60	38	36	70	8	5
115	32	60	42	38	70	8	5
116	32	60	42	38	75	8	5
117	34	70	44	40	75	8	6
118	34	70	45	42	80	8	6
119	36	70	48	44	80	8	6
120	36	70	50	46	80	8	6

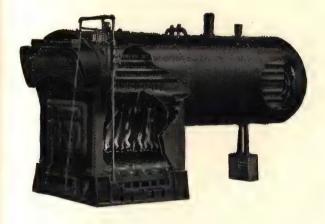
No.	Size Safety Valve In.	Height Water Line In.	Ht. from Floor to Top of Brickwork In.	Number of Common Brick	Number of Fire Brick	Common Brick for Two Boilers
104 105	$\frac{1\frac{1}{2}}{1\frac{1}{2}}$	55 55	77 77	$\frac{2200}{2350}$	85 85	3900 4100
106 107	2 2	55 58½	77	2450	85	4300
108	2	581/2	83 83	2600 2850	100 100	4500 4950
109 110	$\frac{2}{2}$	58½ 61	83 90	3100 3700	100 130	5350 6500
111 112	$2\frac{1}{2}$	61	90	4000	130	7000
113	$\frac{21}{2}$	61 66	90 96	4300 6000	$\frac{130}{155}$	7550 10500
114 115	3	66 75	96 108	6600 7350	$\frac{155}{215}$	11500
116	$3\frac{1}{2}$	75	108	7900	215	$12750 \\ 13700$
117 118	$\frac{31}{2}$	80 80	114	7800 8300	$\frac{250}{250}$	$13200 \\ 14200$
119 120	$^{4}_{2-2\frac{1}{2}}$	$85\frac{1}{2}$ $85\frac{1}{2}$	$\frac{120}{120}$	8700 9300	310 310	15000 16000

Kewanee Boilers are built of steel according to the rules of construction adopted by the American Society of Mechanical Engineers.

Embodied in the design and construction of these boilers are the use of riveted joints, the staying of flat surfaces, arrangement of tubes with relation to each other and to the boiler shells allowing free circulation, together with ample steam space to insure dry steam and a steady water level; also handhole and manhole plates for cleaning and inspection. In fact every condition and advantage for the safe economic operation of a power boiler is exemplified in this product.

Kewanee Fire Box Boilers

Portable Type



With portable type boilers is furnished castings for erecting the boilers, including cast iron ash pit base for smaller sizes.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks, steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains and angle valve.

No trimmings of any kind are furnished with water boilers. Sufficient handholes are provided for cleaning purposes, and in brick-set boilers 42 inches in diameter and larger, and in portable boilers 54 inches and larger, manholes are included.

Kewanee Boilers are built of steel according to the rules of construction adopted by the American Society of Mechanical Engineers.

Embodied in the design and construction of these boilers are the use of riveted joints, the staying of flat surfaces, arrangement of tubes with relation to each other and to the boiler shells allowing free circulation, together with ample steam space to insure dry steam and a cleaning and inspection. In fact every condition and advantage for the safe economic operation of a heating boiler is exemplified in this

				*Price	Price
	0 0	93	Approx.	Steam or	Extra for
No.	Steam	QUARE FEET Water	Weight	Water Boiler Each	Steam
	10 0 0 0 0 11		Pounds		Trimmings
407	2500	4100	6900	\$1115.00	\$40.00
408	2900	4800	7400	1200.00	45.00
409	3500	5800	8300	1320.00	45.00
410	4000	6600	9000	1485.00	85.00
411	4500	7400	9800	1595.00	85.00
412	5000	8300	10600	1705.00	85.00
413	5500	9100	13200	2100.00	105.00
414	6000	9900	14100	2300.00	105.00
415	7000	11600	15900	2650.00	105.00
416	8000	13200	17300	2850.00	125.00
417	9500	15700	20400	3400.00	150.00
418	11000	18200	22000	3640.00	160.00
419	13000	21500	24000	4100.00	200.00
420	15000	24800	25700	4400.00	200.00
421	17500	28500	28000	5300.00	220.00
422	20000	32000	31000	5780.00	220.00
423	25000	40000	37000	6870.00	230.00
424	28000	45000	40000	7370.00	230.00

Openings in fire box for coil \$4.00 per boiler net.

*Fifteen pounds maximum working pressure for steam or water boilers. Castings and tools included.

Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon application.

Kewanee Fire Box Boilers

Portable Type

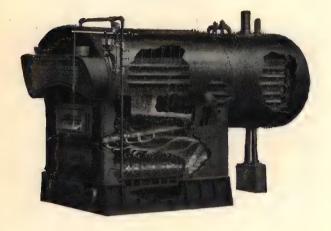
Specifications

No. 407 408 409	Diam. Boiler In. 48 48	Length Boiler Feet $8\frac{7}{12}$ $9\frac{1}{12}$	Width Fire Box In. 36 36	Length Fire Box In. 38 44 50	Height Fire Box In. 41 1/2 41 1/2 41 1/2	Heating Surface Sq. Ft. 278 310 373	Area Grate Sq.Ft. 9,6 11.1 12.6
410 411 412	54 54 54	$10 \\ 11_{\frac{1}{12}} \\ 12_{\frac{1}{12}}$	42 42 42	44 50 56	44 44 44	416 465 515	$12.9 \\ 14.7 \\ 16.5$
413 414 415	60 60 60	$-12\frac{5}{18}$ $13\frac{7}{12}$ $14\frac{1}{3}$	48 48 53	56 62 56	49 49 49	565 626 676	18.8 20.8 20.7
416 417 418	60 66 66	$16\frac{1}{6}$ $15\frac{3}{4}$ $17\frac{1}{3}$	53 59 59	62 62 68	49 52 52	$778 \\ 929 \\ 1040$	22.9 25.5 28.0
419 420 421	72 72 78	$\begin{array}{c} 15\frac{1}{1}\frac{1}{2} \\ 17\frac{1}{2} \\ 17\frac{1}{1}\frac{1}{2} \end{array}$	65 65 71	68 74 74	$54\frac{1}{2}$ $54\frac{1}{2}$ 55	1168 1303 1514	30.8 33.5 36.6
422 423 424	78 84 84	$19^{\frac{1}{1}\frac{1}{2}}_{12} \\ 20^{\frac{1}{12}}_{12} \\ 22^{\frac{1}{12}}_{12}$	71 77 77	80 80 86	55 58 58	1711 2209 2427	39.6 42.9 46.1

No. 407	Diam. Breeching In. 22	Diam. Stack In. 20	Min. Height Stack Feet	Diam. Breeching Two Boilers In. 30	Diam. Stack Two Boilers In. 28	Min. Ht. Stack Two Boilers Feet	Size Steam Opening In.
408	22	20	50	30	28	60	6
409	22	20	55	30	28	65	
410	$24 \\ 24 \\ 24$	22	55	34	31	65	6
411		22	55	34	31	65	6
412		22	60	34	31	70	6
413	26	24	60	38	34	70	8
414	26	24	60	38	34	70	8
415	28	26	65	40	36	75	8
416	28	26	65	40	36	75	8
417	30	28	65	44	40	75	8
418	32	30	70	46	42	80	8
419	34	32	70	50	46	80	8
420	34	32	70	50	46	80	8
421	36	34	80	52	48	90	8
422	36	34	90	52	48	$100 \\ 100 \\ 110$	8
423	40	38	90	56	54		10
424	42	40	100	56	54		10

424	42	40	100	56	-	54	110	10
No. 407 408 409	Size Return In. 4 4	Siz Safe Valv In. 2 2 2	ety ve	Height Water Line In. 71 71		Height Floor to Top of Shell In. 84 84 84	Flue	Required on Rear Doors n.
410 411 412	4 4	2 2 2		76 76 76		89 89	2 2 2	28 28 28
413 414 415	5 5 5	$\frac{21/2}{3}$	1	83 83 87		98 98 101	8	32 32 32
416 417 418	5 6 6	$\frac{3}{3\frac{1}{2}}$		87 90 90		101 107 107	5	32 35 35
419 420 421	6 6	4 4 2-2)	1/2	96 96 97		113 113 115	6	37 37 10
422 423 424	6 6	$\begin{array}{c} 2 - 3 \\ 2 - 3 \\ 2 - 3 \end{array}$	4	$\begin{array}{c} 97 \\ 105 \\ 105 \end{array}$		$115 \\ 121 \\ 121$	4	10 13 13

Kewanee Smokeless Fire Box Boilers Portable Type



Kewanee Boilers are built of steel according to the rules of construction adopted by the American Society of Mechanical Engineers.

Embodied in the design and construction of these boilers are the use of riveted joints, the staying of flat surfaces, arrangement of tubes with relation to each other and to the boiler shells allowing free circulation, together with ample steam space to insure dry steam and a cleaning and inspection. In fact, every condition and advantage for the safe economic operation of a heating boiler is exemplified in this product.

Portable type boilers are furnished with castings for erecting the boilers, including cast iron ash pit base for smaller sizes.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks, steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains, and angle valve.

No trimmings of any kind are furnished with water boilers. Sufficient handholes are provided for cleaning purposes, and in brick-set boilers 42 inches in diameter and larger, and in portable boilers 54 inches and larger, manholes are included.

No. 307 308 309	Capacity, S Steam 3000 3500 4000	QUARE FEET Water 5000 5800 6600	Approx. Weight Pounds 7800 8600 9300	*Price Steam or Water Boiler Each \$1410.00 1530.00 1650.00	Price Extra for Steam Trimming \$55.00 55.00 90.00
310	4500	7400	$10400 \\ 11100 \\ 11900$	1850.00	95.00
311	5000	8300		1965.00	95.00
312	5500	9100		2080.00	100.00
313	6000	9900	$14500 \\ 15300 \\ 16900$	2520.00	110.00
314	6500	10700		2730.00	110.00
315	7500	12400		3070.00	130.00
316	8500	14000	17800	3270.00	130.00
317	10000	16500	20900	3850.00	160.00
318	12000	19800	22900	4080.00	170.00
319 320 321 322	14000 16000 18000 20000	23100 26400 29700 33000	25000 26500 28800	4500.00 4800.00 5450.00	170.00 200.00 225.00
323 324	25000 30000	40000 48000	30000 37000 43000	5800.00 7400.00 8400.00	225.00 235.00 235.00

Openings in firebox for coil, \$4.00 per boiler net.

*Fifteen pounds maximum working pressure for steam or water boilers. Castings and tools included.

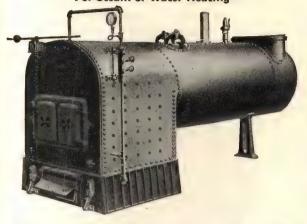
Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon application.

Kewanee Smokeless Fire Box Boilers

Portable Type Specifications

		Boiler	Width	Length		
	Diam. Boiler	Over All	Fire Box	Fire Box	Heating	Area Upper Grate
No.	In.	Feet	In.	In.	Surface Sq. Ft.	Sq. Ft.
307 308	48 48	$9\frac{1}{12}$	36	54	297	8.8
309	48	$10^{5}_{12} \ 11^{5}_{12}$	36 36	60 66	352 391	$10.1 \\ 11.4$
310	54	1011				
311	54	11	$\begin{array}{c} 42 \\ 42 \end{array}$	$\frac{72}{78}$	446 496	$12.9 \\ 14.7$
312	54	$12\frac{1}{12}$	42	84	546	16.5
313	60	1211	48	78	592	17.1
314	60	13!!	48	84	643	18.5
315	60	$15\frac{1}{4}$	53	90	721	20
316	60	$16\frac{1}{4}$	53	96	773	21.4
317 318	66 66	1534	59	90	912	23.5
		$17\frac{3}{4}$	59	96	1053	25.9
319 320	$\begin{array}{c} 72 \\ 72 \end{array}$	$16\frac{7}{12}$	65	96	1204	28.5
321	78	$17\frac{1}{12}$ $17\frac{2}{8}$	65 71	$\begin{array}{c} 102 \\ 102 \end{array}$	1316	29.9
322	78				1458	32.6
323	84	$\begin{array}{c} 18\frac{5}{6} \\ 20\frac{1}{12} \end{array}$	71 77	108 114	1549	34.6
324	84	24_{12}^{12}	77	120	$\frac{2074}{2629}$	$\frac{41.7}{44.8}$
		- 12	• •			
	Di	70.	Min.	Diam. Breeching	Diam. Stack	Min. Ht. Stack
	Diam. Breeching	Diam. Stack	Height Stack	Two Boilers	Two Boilers	Two Boilers
No.	In.	In.	Feet	In.	In.	Feet
307 308	22 22	$\frac{20}{20}$	50	30	28	60
309	22	20	55 5 5	30 30	28 28	65
310	24	22				65
311	24	22	55 55	34 34	31 31	65 65
312	24	22	60	34	31	70
313	26	24	60	38	34	70
314	26	24	60	38	34	70
315	28	26	65	40	36	75
316	28	26	65	40	36	75
317 318	$\frac{30}{32}$	28 30	65	44	40	75
			70	46	42	80
319 320	34 34	$\frac{32}{32}$	70 70	50	46	80
321	36	34	80	$\begin{array}{c} 50 \\ 52 \end{array}$	46 48	80
322	36	34	90			90
323	40	38	90	52 56	48 54	$\begin{array}{c} 100 \\ 100 \end{array}$
324	42	40	100	56	54	110
					Height	
	Steam	Size	Size	Height	Floor	Dis. Reqd. to Open
	Opening	Return	Safety Valve	Water Line	to Top	Rear Flue Doors
No.	In.	In.	In.	In.	In.	In.
307 308	6	44	$\frac{2}{2}$	$\frac{71}{71}$	84	26
309	6	4	2	71	84 84	26 26
310	6	4	$2\frac{1}{2}$	76	89	
311	6	4	$\frac{272}{21/2}$	76	89	28 28
312	6	4	$2\frac{1}{2}$	76	89	28
313	. 8	5	3	83	98	32
314	8	5 5 5	3 3 3	83	98	32
315				87	101	32
316	8	5	$3\frac{1}{2}$	87	101	32
317 318	8 8	6	$\frac{31}{2}$	90	107	35
			4	90	107	35
319 320	8	6	$\frac{4}{4}$	96 96	113	37
321	8	6	$^{4}_{2-2}$	96 97	113 115	37 40
322				97		
323	8 10	6	2-3 2-3	105	115. 121	40 43
324	10	6	2-3	105	121	43

Kewanee Fire Box Boilers K Straight Draft Portable Boiler For Steam or Water Heating



With portable type boilers are furnished castings for erecting the boilers, including cast iron ash pit base for smaller sizes.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks, steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulators with leave maintenance. tor with lever, weights pulleys, chains and angle valve.

No trimmings of any kind are furnished with water boilers.

							T FICE	Aud
			Size	Size	Size		with	Extra for
		ACITY	Flow	Return	Safety	Approx.	Tools	Steam
		FT.	Open.	Open.	Valve	Wt.	only	Trimmings
No.	Steam	Water	În.	fn.	In.	Lbs.	Each	Each
1K	850	1400	4	21/2	11/4	2900	\$550.00	\$35.00
2K	1000	1600	4	21/2	11/4	3200	600.00	35.00
3K	1150		5		115			
		1900		3	11/4	3500	665.00	35.00
4K	1300	2200	5	3	11/2	3900	725.00	35.00
5K	1600	2600	6	3	11/2	4400	790.00	35.00
6K	1900	3100	6	3	2	4900	850.00	40.00
8K	2450	4100	6	4	2	6300	1050.00	40.00
9K	2850	4700	6	4	2	6900	1136.00	50.00
10K	3300	5500	6	4	2	7600	1215.00	50.00
11K	3800	6300	6	4	2	8300	1320.00	80.00
12K	4300	7000	8	5	2	9000	1425.00	80.00
13K	5200	8600	8	5	2 .	11100	1705.00	95.00
14K	6200	10100	8	5	3	12400	1895.00	95.00
15K	7100	11800	8	5	3			
						15000	2355.00	125.00
16K	8200	13700	8	5	3	16600	2580.00	125.00
17K	9500	15700	8	6	31/2	17900	2875.00	150.00
18K	10400	17300	8	6	$3\frac{1}{2}$	19200	3225.00	160.00
19K	11400	18800	8	6	4	21900	3550.00	160.00
20 K	13300	21900	8	6	4	23700	3850.00	160.00
SECTA.	A					4 10	1 0 /	1

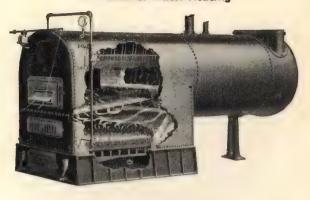
*Maximum working pressure of 15 pounds, for steam and water boilers. Castings and tools included.

Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon application.

Denings in fire how for coil \$4.00 list nor boiler

U)	penings	in nre	xod e	ior coll,	\$4.00	list pe	r boil	er.	Height
		LENG	HT	Heat.	Area	Diam.		Height	Floor to
	Diam.	OVE		Surf.	· of	Brech-	Diam.	Water	top of
2.5	Boiler	AL.		Sq.	Grate	ing	Stack		Boiler
No.	In.	Ft.	In.	Ft.	Sq. Ft.	In.	In.	In.	In.
1K		7	10	83	4.4	12	12	52	59
2K	30	8	10	93	5.4	14	12	52	59
3K		9	10	104	6.4	16	14	52	59
4 K		8	10	139	6.8	16	14	55	65
5 K		10	4	164	8.0	18	16	55	65
6 K		11	10	190	9.3	18	16	55	65
8K	42	11	4	241	11.1	20	18	581/2	71
9 K		12	10	275	12.6	22	20	581/2	71
10K		11	10	298	12.9	22	20	61	77
11K	48	13	4	338	14.7	24	22	61	77
12K	48	14	10	378	16.5	24	22	61	77
13 K	54	15	4	447	18.8	28	26	66	83
14K		17	10	537	20.8	28	26	66	83
15K	60	17	0	603	22.9	32	30	75	93
16 K	60	19	6	708	25.1	32	30	75	93
17K	66	17	6	791	25.5	32	30	80	99
18K	66	19	6	896	28.0	32	30	80	99
19K	72	17	6	992	30.8	36	34	851/2	105
20 K	72	19	6	1129	33.5	36	34	$85\frac{1}{2}$	105

Kewanee Fire Box Boilers Type K Smokeless Portable Boilers For Steam or Water Heating



The sectional view above shows arrangement of double The sectional view above shows arrangement of double grates and long travel of gases. Recent tests of Kewanee Smokeless Boilers, made by a recognized boiler authority, prove that when burning soft coal, under conditions similar to those prevailing in most large buildings, their efficiency ranges from 73 to 81 per cent. The ordinary type heating boiler averages about 60 per cent efficiency.

The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compressions.

sisting of water column with water gauge and three compression gauge cocks; steam gauge with syphon and cock, pop safety valve, and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains, and angle valve.

							*Price	Price
			ize	Size	Size	,	with	Extra
	CAPA			Retur		Approx.	Tools	for Steam
37	Sq. 3				n. Valve	Wt.	only	Trimmings
No.	Steam	Water	In.	In.	In.	Lbs.	Each	Each
$104 \mathrm{K}$	1500	2450	5	3	$1\frac{1}{2}$	5000	\$935.00	\$40.00
105K	1900	3100	6	3	$1\frac{1}{2}$	5600	1000.00	40.00
106K	2200	3600	6	3	2	6100	1075.00	45.00
107K	2500	4100	6	4	2	6900	1210.00	45.00
108K	2900	4800	6	4	2	7500	1290.00	45.00
109K	3400	5600	6	4	2	8100	1370.00	55.00
110K	3800	6300	6	4	2	9200	1530.00	90.00
111K	4400	7400	6	4	$2\frac{1}{2}$	9900	1660.00	90.00
112K	5200	8600	8	5	$2\frac{1}{2}$	10600	1790.00	95.00
113K	6200	10100	8	5	3	12600	2070.00	100.00
114K	7100	11800	8	5	3	14000	2280.00	115.00
115K	8100	13300	8	5	3	16500	2820.00	135.00
116K	9500	15700	8	5	31/2	18100	3040.00	155.00
117K	10900	18000	8	6	31/2	20500	3475.00	165.00
118K	12300	20400	8	6	4	22200	3775.00	165.00
119K	13300	21900	8	6	4	24000	4200.00	165.00
120K	15200	25000	8	6	2-21/2	26000	4500.00	200.00
					,			

*Maximum working pressure of 15 pounds, for steam and water boilers. Castings and tools included.

Prices for steam boilers for working pressure more than 15 pounds but not exceeding 100 pounds will be furnished upon

application. in fire how for soil \$4.00 list nor bail

	Ope	nings	ın nre	box	for coll,	\$4.00	list pe	r boil	er.	Height
		77.1	Leng		Heat.	Area	Diam.		Height	Floor to
		Diam	Poi		Surf.	Upper	Breech-		Water	Top of
	37	Boiler	Over		Sq.	Grate	ing	Stack	Line	Boiler
	No.	In.	Ft.	In.	Ft.	Sq. Ft.		In.	In.	In.
	04K	36	9	11	157	5.9	20	18	55	65
	05K	36	11	5	185	7.2	20	18	55	65
	06K	36	12	11	220	8.4	22	20	55	65
	07K	42	11	2	234	8.6	22	20	581/2	71
	08K	42	12	8	271	10.1	22	20	581/2	71
	09K	42	14	2	308	11.4	24	22	$58\frac{1}{2}$	71
	10K	48	13	8	338	11.8	24	22	61	77
	11K	48	15	2	381	13.2	27	24	61	77
	12K	48	16	8	425	15.0	27	24	61	77
1	13K	54	17	1	500	17.1	30	28	66	83
	14K	54	19	7	590	19.1	30	28	66	83
	15K	60	19	4	677	21.1	34	32	75	93
	16K	60	21	10	787	23.3	34	32	75	93
	17K	66	19	10	879	23.5	36	34	80	99
	18K	66	21	10	987	25.9	. 36	34	80	99
	19K	72	19	10	1090	28.5	38	36	851/2	105
1	20K	72	21	10	1230	31.3	38	36	851%	105

Capitol Cast Iron Boilers

Capitol—Square



Steam Series



Water Series

Capitol Winchester-Round



Steam Series



Water Series

Full information and prices given on application.

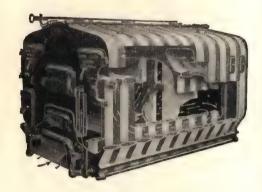
Special catalogue on round, square, and smokeless boilers, also hot water supply boilers sent upon request.

Capitol Boilers

No. 400 Series and 40-Inch Series Smokeless Steam Boilers



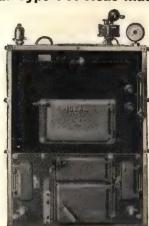
No. 400 Series and 40-inch Series Smokeless Water Boilers



No. 500 and 50-inch Series Smokeless Boilers



Ideal Type I-A Heat Machines



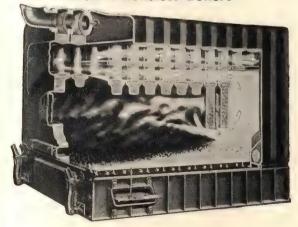
These boilers are covered with metallic jacket and have extremely low water line adapted for low cellars. Burns hard or soft coal, gas or oil fuel.

Ideal Water Tube Boilers



Made in 23, 29, 36, 48 and 79-in. sizes. Burns hard or soft coal, gas or oil fuels.

Ideal Smokeless Boilers



These boilers conform with all known anti-smoke ordinances as they burn all grades of soft coal smokelessly. They are equipped with Ideal Smoke Oxidizer that will last as long as the boiler. Made in 29, 36, 48 and 79-inch.

Special catalogue sent upon application.

Ideal Arco Round Boilers

Steam Boiler Capacities—350 to 1700 Square Feet Water Boiler Capacities—600 to 2825 Square Feet





Steam

Water

Ideal cast iron heating boilers are constructed on the unit or sectional plan, which permits of the adding of sections in the event of increased capacity being required. This construction facilitates the moving of the boilers by shipping them knocked down, which permits their admission into buildings through ordinary doors or windows.

Ideal Boilers are made with capacities for both steam and water, ranging from the smallest cottage to large buildings of any description.

For burning hard and soft coal, gas and oil fuel. Special catalogue and quotations sent upon application.

Ideal Arcola Heaters

PATENTED JANUARY 18, 1921. OTHER PATENT PENDING.





The Ideal Arcola Heater places the comfort and fuel economy of hot water heating within the reach of owners of cellarless bungalows, small city and farm cottages, one-story stores and office buildings, small country school-houses, village fire houses, police stations, etc. It is neat and compact.

It is peculiarly adapted for use in those two and three-story flat buildings and combination store and flat buildings where

It is peculiarly adapted for use in those two and three-story flat buildings and combination store and flat buildings where each tenant prefers to run his own heating outfit to suit his family's needs or preference as to exact degree of warmth, and without going to a cellar to attend the fire.

	No.		App.		No.		App.
	Sec-	Rating	Ship.		Sec-	Rating	Ship.
No.	tions	Sq. Ft.	Wt., Lbs.	No.	tions	Sq. Ft.	Wt., Lbs.
4-H	4	200	445	7-H	7	500	655
5 -H	5	300	515	8-H	8	600	725
6 -H	6	400	400	9-H	9	700	795

Prices and booklet furnished upon application.

Ideal Vecto House Heaters





A compact, self-contained, beautiful heating unit has been perfected which warms, not one room, but a whole home, and yet consumes no more coal than is now used by old-fashioned methods to heat one room. This is the Ideal Vecto Heater. Its warmth is clean and healthful. It requires no basement

Its warmth is clean and healthful. It requires no basement for installation; it is an ornament in any room. For more or less heat, it is only necessary to turn a handle. Compact and self-contained, it may be moved like furniture. It burns either coal or wood.

In principle and construction, the Ideal Vecto Heater is altogether different from old-fashioned heating devices. It is a scientific application of nature's way of spreading warmth. That is why it is so almost unbelievably efficient as to warm an entire small home while consuming only the same amount of fuel, or less, than is ordinarily used to heat one room.

The operation of the Ideal Vecto Heater is based on the

The operation of the Ideal Vecto Heater is based on the natural law of gravitation. Air is drawn in at the base, and brought into contact with a very extensive, scientifically designed heating surface; being warmed, it flows upward and outward, carrying its warmth to every corner of the home. The process is continuous. A gentle suffusion of even, comfortable warmth fills every room.

The process is continuous. A gentle suffusion of even, comfortable warmth fills every room.

The great secret of the Ideal Vecto Heater lies in its extraordinarily large and scientifically designed heating surface, the temperature of which is contz olled by the simple turning of a handle conveniently placed in the front of the heater.

Its fire-lights shine clearly through the window glow-panels in front. These glow-panels are made of a chemically prepared glass mixture that does not flake or break under fire temperatures. The cover of the Vecto Heater is sheet steel, finished with a highly lustrous gray enamel. This finish is vitreous enamel, baked on at a very high temperature, so that it will not be affected by heat.

For more heat, or less, it is only necessary to turn the control handle conveniently placed in the front. This handle works on a graduated dial. So simple it is that a child could perfectly ordered by converting the control of the could be set to
and safely operate it.

When the control handle is turned for any desired heat output, the movement is transferred to the draft damper at the rear base. Just the right amount of air is admitted to the fire to keep it at the required rate of combustion. No more fuel is burned than is necessary to maintain the home in solid comfort at all times.

Its inside is cast in one single, seamless piece.

There are no joints or crevices whatever through which any gas or dust might escape into the home, or through which excess air might leak into the heater.

The large front door, the Lock-Safe Fire Door is another special feature. When this door is closed, the fire is effectively sealed. It is impossible, then, to force it in any unsafe or wasteful manner.

Made in one size only for buildings not to exceed 8000 cubic

Height, 48 inches. Width, 22 inches. Length, 21 inches.

Price.....each

Corto Radiators



The series of columns that constitute this radiator make it unparalleled for resisting high internal pressures. The internal area of its tubes in relation to the heating surface has been reduced to about one-quarter of that now generally in use. Not only has this invention greatly increased the pressure-resisting ability of the Corto Radiator, but in reducing the internal area the water or steam contents are likewise decreased.

The water content of the Corto is equal to three-fourths of a pound per square foot of heating surface, or about one-half the water content of the average radiator; this assures quick and positive venting for all kinds of steam and vapor systems, while in water installations it provides a rapid circulation, causing the radiator to respond more quickly to the immediate heating needs.

Irrespective of height, a series of six sizes ranging from two to four and one-half feet of heating area have been produced, and the surface of each additional size will be increased by one-half square foot, thus abandoning the cumbersome method of increasing heating surface by irregular fractions.

For Steam and Water

HEATING SURFACE—SQUARE FEET

_			38-in.	34½-in.	31-in.	27-in.	23-in.	19½ in
N	lumber	der di	Height	Height	Height	Height	Height	Height
a	of	*Length	41/2 Sq. Ft.	4 Sq. Ft.	31/2 Sq. Ft.		21/2 Sq. Ft.	2 Sq. Ft
D	ections	Inches	per Sec.	per Sec.	per Sec.	per Sec.	per Sec.	per Sec
	2	4	9	8	7	6	5	4
	3	6	$13\frac{1}{2}$	12	$10\frac{1}{2}$	9	$7\frac{1}{2}$	6
	4 5	8	18	16	14	12	10	8
		10	$22\frac{1}{2}$	20	$17\frac{1}{2}$	15	$12\frac{1}{2}$	10
	6	12	27	24	21	18	15	12
	7	14	$31\frac{1}{2}$	28	241/2	21	$17\frac{1}{2}$	14
	8	16	36	32	28	24	20	16
	9	18	401/2	36	311/2	27	$22\frac{1}{2}$	18
	10	20	45	40	35	30	25	20
	11	22	491/2	44	$38\frac{1}{2}$	33	$27\frac{1}{2}$	22
	12	24	54	48	42	36	30 "	24
	13	26	581/2	52	$45\frac{1}{2}$	39	$32\frac{1}{2}$	26
	14	28	63	56	49	42	35 "	28
	15	30	671/2	60	$52\frac{1}{2}$	45	371/2	30
	16	32	72	64	56	48	40	32
	17	34	$76\frac{1}{2}$	68	591/2	51	$42\frac{1}{2}$	34
	18	36	81	72	63	54	45	36
	19	38	851/2	76	661/2	57	471/2	38
	20	40	90	80	70	60	50	40
	21	42	941/2	84	$73\frac{1}{2}$	63	$52\frac{1}{2}$	42
	22	44	99	88	77	66	55	44
	23	46	1031/2	92	801/2	69	571/2	46
	24	48	108	96	84	72	60	48
	25	50	$112\frac{1}{2}$	100	871/2	75	$62\frac{1}{2}$	50
		00	11-/2	200	0.72	10	02/2	UU

*Each section, 2 inches long. Add ½-inch to length of radiator for each bushing.

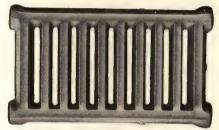
TAPPINGS.—1½ inches top and bottom and bushed for water or steam.

CONNECTIONS.—Extra heavy right and left threaded nipples.

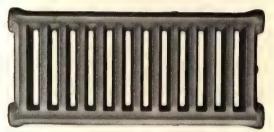
Triton Wall Radiators



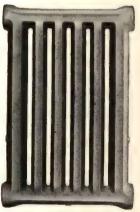
No. 5A



No. 7A



No. 9A



No. 7B

Triton Wall Radiators should always be assembled with bars vertical, whether sections are built in stacks or tiers. Nos. 5A, 7A and 9A are used when

sections are to be assembled end to end, and Nos. 7B and 9B when assembled side by side.

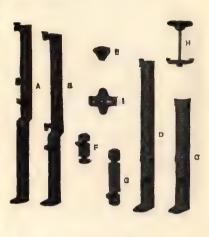
Section No.	Height Inches	Length or Width Inches	Thickness Inches	Thickness with Brackets Inches	Heating Surface Sq. Ft.
5 A	$14\frac{1}{8}$	$16\frac{1}{2}$	3	$3\frac{1}{2}$	5
7 A	$14\frac{1}{8}$	$22\frac{7}{8}$	3	31/2	7
9A	$14\frac{1}{8}$	291/4	3	31/2	9
7 B	$22\frac{7}{8}$	$14\frac{1}{8}$	3	31/2	7
9 B	291/4	141/8	3	31/2	9
		-70		-/2	0

Wall Radiator Brackets

Brackets B to fit over a 9½-inch high baseboard for supporting Style B wall radiators.

Brackets A to fit over baseboard for supporting Style A wall radiators.

	Ht. Floor	Fits
	to Center	Base-
	of Tap	board
No.	In.	In.
B- 51/2	51/2	91/2
B- 71/2	71/2	91/2
B- 91/2	$9\frac{1}{2}$	91/2
A- 6	6	$1\frac{1}{2}$
A- 8	8	$3\frac{1}{2}$
A-10	10	$5\frac{1}{2}$
A-12	12	$7\frac{1}{2}$
A-14	14	$9\frac{1}{2}$
A-16	16	$11\frac{1}{2}$



Brackets D are straight right angle brackets without offset, for supporting Style B radiators. Distance from floor to center at tapping, $5\frac{1}{2}$ inches.

Brackets C are for Style A radiators. Distance from floor to center of tapping, $5\frac{1}{2}$ inches.

Brackets F, G, E and I are screwed to wall, baseboard and wainscoting. F and G are bottom supports for all sizes. E and I, top guides to hold radiator in place, should always be used with F and G brackets.

Ceiling brackets H for supporting radiator from ceilings, made of cast plate $3\frac{3}{8}$ inches in diameter, to be screwed to ceiling joists by four screws. Bolt furnished gives a distance of from $3\frac{1}{2}$ to 5 inches from bottom of radiator to ceiling. Other lengths on special order.

Adjustable Concealed Radiator Brackets

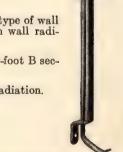


Grafton Adjustable Wall Radiator Brackets

This bracket is made to fit any type of wall radiation, also, 1, 2 and 3 column wall radiators.

The same bracket will fit 7 and 9-foot B sections of wall radiation.

In ordering, specify the type of radiation.



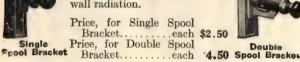
Price	 	 											.eacl	h	\$2.00	
	 	 		۰	٠.		٠	۰,			•	 	* 0000	_	4-00	e

Wall Radiator Brackets

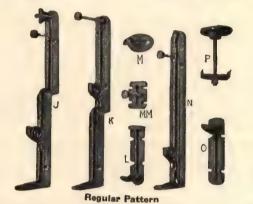
New Arco Adjustable

PATENTED

Has vertical adjustment of 2 inches. The outer face of the radiator sets 4% inches from the wall. The spools on the bottom bracket allow horizontal movement for expansion and contraction. The malleable iron finger of the top guides it and keeps it from tipping forward. Single spool bracket for one run of wall radiation. Double spool bracket for two runs of wall radiation.







J brackets fit over a 9½-inch high baseboard for supporting wall radiators Nos. 7B and 9B. One 1/4-inch bolt and button furnished with each bracket.

K brackets to fit over baseboard for supporting wall radiators Nos. 5A, 7A and 9A. One 1/4-inch stove bolt and button

furnished with each bracket.

Brackets L, O, MM and M are screwed to wall baseboard or wainscoting. L and O brackets are bottom supports for all sizes of wall radiators. MM and M brackets are top guides to hold radiator in place. L and MM brackets are concealed; O and M brackets are not. One MM or M bracket should be used with each L or O bracket. L, O and MM brackets are slotted for four, and the M bracket for two wood screws, one 4-inch stove bolt and button furnished with each MM bracket.

Bracket N is a straight right angle bracket, without offset, for supporting all sizes of wall radiators; height from floor to center of end tapping bosses, 5½ inches. One ¼-inch stove bolt and button with each N Bracket.

Ceiling bracket P is made of cast plate, 3½-inch diameter

and screwed to ceiling joists by four screws. The bolt furnished gives a distance of 3½ inches to 5 inches from bottom of radiator to ceiling. Other length bolts furnished on special

Note.—In ordering buttons and stove bolts separately state for which bracket.

	B	leigh	it fro	m Flo	or to	Ce	nte	r of	Sur	only	OF	Re	tur	m l	En	d c	ď			Price
No.]	Low	est	Ta	nnii	10	-	0.00	0 400	86 3						Each
J-1	01/																			
-	$9\frac{1}{2}$	-in.																		\$.80
J-2	71/9	-66																		.75
J-3	512	66																		
-	072																		4	.70
K-1	16	- 66	for	111	5-in	. В	las	eb	oai	٠d .										.88
K-2	14	46	66	0.1	6 66			66							- +			۰		
	100	i	66	37	Z			66												.84
K-3	12	**	**	13	2 "			**												.80
K-4	10	66	46	51	2 "													-		.76
K-5	8	66	46	01	2 4															
	8	-	***	-3^{1}	2															.72
K-6	6	-66	66	11	6 4															.68
T. DA	BALAA	0		-/	4	۰			• •									٠	4	
Li, IVE,	MM,	Ο.		* * *																.20
N																				.75
P-31/	to 5 E	wt.																	0	
#-072	OOL	AA U																		. 50

Peerless Radiator Brackets

Made of Malleable Iron

Made for 1, 2, 3, and 4-column radiators for water, steam or vapor heating. Holds securely with only one stud bolt or lag screw with expansion bolt, thereby greatly reducing the cost of installation.



Single Column



Two Column

One Col. Bracket No.	Dist. from Wall Inches	Price Each	Two Col. Bracket No.	Dist. from Wall Inches	Price Each
102	2	\$1.25	202	2	\$1.40
103	3	1.30	203	3	1.50
104	4	1.40	204	4	1.60
105	5	1.50	205	5	1.70



Three Column



Four Column

Price

per

\$.60

1.00

1.00

1.20

Three Col. Bracket No.	Dist. from Wall Inches	Price Each	Four Col. Bracket No.	Dist. from Wall Inches	Price Each
302	. 2	\$1.60	402	2	\$1.90
303	3	1.65	403	3	2.20
304	4	1.70	404	4	2.50
305	5	1.80	405	5	2.80

Concealed Radiator Brackets For Column Wall Radiators



Number of Columns	1	2	3	4
Wall to Center of Tappings inches	3	41/6	$5\frac{7}{32}$	613/6

Concealed Radiator Brackets



Kewanee Type D Garbage Burners and Water Heaters



This burner is easily operated. The fire is started on the lower or coal grates—for garbage destruction, the fire need not be heavy—fresh garbage is thrown into the upper chamber in quantities to completely fill it if necessary.

The smoke and burning gases pass around through a by-pass to the smoke exit, destroying the odors of the smouldering refuse. The by-pass causes the damp, or even wet, garbage to be quickly dried, so that it burns readily.

Each tube has a brass clean-out plug at the ends in the outer shell of the burner.

The burner is built to stand a working pressure of 125 pounds per square inch.

To burn garbage and refuse see that fire is burning clear, open the damper in the smoke pipe wide, close the fire door and lower draft door, throw garbage and refuse in upper chamber only and keep the by-pass free from refuse. If there is an odor from the top of the stack the fire is not burning clear and there is not enough draft.

To maintain fire do not carry the fire above the bottom of the fire door. Remove ashes from ash-pit every time fire is shaken, otherwise grates will be burned. Bank fires at night.

Suggestions for facilitating combustion: drain liquids off the garbage; line garbage cans with old newspapers and destroy these papers with the garbage.

To clean burner remove brass plugs on sides of burner, all handhole plates, scrape all interior surfaces free from mud and sediment. Flush out entire heater with water. Do this at least five times a year; more frequently if necessary.

No. 36 37 38 39 40	Capacity per Hour 50° Raise Gal. 800 1000 1200 1500 1800	Capacity Garbage Chamber One Charge Bushels 4 5 7 9	Ht. Over All In. 56 56 56 56 56	Size Floor Space Required In. 35x35 35x41 35x47 41x53 41x59	Ht., to Bottom of Garbage Door In. 31 31 31 31	Size Garbage Door In. 16x16 16x16 16x16 16x16 16x16
No. 36 37 38 39	Fire Door 16x10 16x10 16x10 16x10 16x10 16x10	Coal Grates 24x24 24x30 24x36 30x42 30x48	Size Flow and Return Flanges In, 2½ 2½ 2½ 3 3	Diam. Smoke Pipe In. 10 10 12 12	Approx. Ship. Wt. Pounds 2100 2300 2500 3000 3300	Price Complete Each \$560.00 610.00 660.00 780.00 870.00

Furnished complete with tools.

Kewanee Type A Garbage Burner and Water Heater



This burner is built on the same general principles as the type D, but is round and of smaller capacity.

Cheap soft coal can be used to operate these burners, and they require little

For the best results, locate the garbage burner as near to the chimney flue as possible. Smoke opening and chimney should be the same size as the smoke outlet in the burner.

Burner should be as close to the tank as possible, and the bottom of the tank should be as high as the top of the garbage burner, if possible.

Do not reduce size of pipes connecting tank and heater. Pipes of the same sizes as the openings should be used to insure perfect circulation.

A manhole in the storage tank is recommended to remove sediment.

Garbage burner should have an independent smoke opening in chimney.

Maximum working press	ure, 10	0 pound	ls per so	quare in	ich.
No		30	31	32	3.3
Cap., per Hourg	allons	200	300	400	600
" Chamber Chargeb	ushels	1	2	3	4
Height Over Alli	nches	58	64	64	68
Diameter Floor Space	-44	22	25	30	36
Height to Bottom of Front Garbage Door	а	33	37	37	39
Dimen. Garbage Door	44	7x8	7x8	7x8	9x12
" Fire Doors	46	7x8	7x8	7x8	9x12
Diam. Lower Grates	46	12	16	20	24
Size Flow and Return Flanges	ш	11/2	2	2	2
Diam. Smoke Fipe	66	6	8	8	81/2
Approx. Ship. Wts	ounds	600	800	1000	1500
Price, Complete with Tools.	.each	\$190.00	230.00	260.00	350.00
Ratings based on raising				50° an h	our.

Tabasco Tank Heaters All Steel—Self-Feed and Surface Burners





Sectional

	Heating			Size of	Equiv.				
	Capacity			Flow and	Diam.	MAGAZ	NE FEED	SURFACE	BURNER
27	per Hour	Heater	Height	Return	Smoke	Weight	Price	Weight	
No.	Gallons	Inches	Inches	Inches	Pipe, In.	Pounds	Each	Pounds	Each
17	130	17x30	52	2-11/2	6	455 3	\$130.00	400 \$	125.00
18	150	17x36	57	$2-1\frac{1}{2}$	6	480	135.00	420	130.00
21	200	21x30	52	2-11/2		590	160.00	520	150.00
22	250	21x36		$2-1\frac{1}{2}$	7	625	165.00	550	155.00
25	300	25x36	59	2-2	81/4	900	195.00	780	185.00
26	350	25x42	65	2-2	81/4	935	200.00	810	190.00
27		25x48	71	2-2	81/4	965	205.00	840	195.00
30	500	30x42		$2-2\frac{1}{2}$		1625	250.00	1500	235.00
31	600	30x48		$2-2\frac{1}{2}$		1700	260.00	1600	245.00
32		30x54		2-21/2		1780	270.00		255.00
	Magaz	ine fee	d he	tore el	hinned	unlas	ia airmfo a	a harma	0'00 000

Magazine feed heaters shipped, unless surface burners are specified in order. Provided with brass cleanout plug.

Built for heating water for apartment buildings, barber shops, etc., from 130 to 700 gallons of water every hour.

Heating capacity is based on raising the water 50 degrees Fahrenheit in one hour.

King Laundry Tank Heaters



Inside diameter fire pot at top, 11¾ inches; outside diameter fire pot at top, 14½ inches; height of fire pot, 8 inches. Diameter of grate, 9½ inches. Pipe collar, 6 inches. Heating capacity per hour, 100 gallons.

No.	80 A	480 A
Style	2-Hole	4-Hole
Topinches	191/4x22	$22\frac{1}{2}$ x $24\frac{1}{2}$
Height Over All	24	$24\frac{1}{2}$
Weight pounds	120	140
Priceeach	\$20.40	26.00

Excelso Water Heaters



Can be easily connected to any new or old installation. Connected on the outside of steam or vapor boilers. Eliminates the fire pot coil and insures a constant supply of domestic hot water all during the heating season at an even temperature.

*Heating water below water line of steam or vapor boiler temperature rises 100 degrees in three hours.

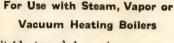
†Heating water with live steam, temperature rises 100 degrees in three hours at 5 pounds pressure.

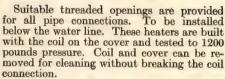
Canadime Gara

‡Formerly Nos. 16, 17 and 18.

					UAPACE	CY. CIALS.		
			Shell	Coil	*Below	tWith		
	Length	Diam.	Openings	Openings	Water	Live	Price	
No.	Inches	In.	Inches	Inches	Line	Steam	Each	
			2,10200	22102200				
Jr.	$8\frac{1}{2}$	5	1	3/4	30	45	\$12.50	
11	$10^{1/2}$	5	7	3.7	30	50	30.00	
				74				
12	14	5	1	3/4	45	75	40.00	
13	111/2	61/2	116	1	60	100	50.00	
		-/-	113	4				
14	15	$6\frac{1}{2}$	1/2	1	90	150	60.00	
15	$19\frac{1}{2}$	$6\frac{1}{2}$	11/6	1	120	200	70.00	
			0/2	11/				
25	$12\frac{1}{2}$	9	2	1/2	160	250	120.00	
26	15	9	2	11/6	200	300	150.00	
627	19	9	2	712				
				1/2	300	450	180.00	
128	231/4	9	2	11/2	400	600	210.00	
35	21	133/4	3 3	21/2	600	900	310.00	
36	25	1334	. 3	21/2	800	1200	400.00	
		, .					-20.00	

Domestic Taco Water Heaters





No.	Range Boiler Gallons	to Range Boiler In.	Boiler Con. In.	Shipping Weight Pounds	Price Each
30	Up to 30	3/4	1	11	\$15.00
1	a 40	3/4	1	14	20.00
2	" " 80	1	$1\frac{1}{4}$	24	30.00
3	" " 160	11/4	2	52	50.00

Water Con. Heating

Flo-line Taco Water Heaters For Use with Steam or Hot Water Heating Boilers

The water supply is heated by its circulation through the copper coil, which is in the flow-line from the steam or water heating boiler. To be piped to range boiler installed above Taco Heater.

Recommended for use in connection with hot water heating plants only where provision is made for use of gas or coal heater on wash day and at such other times when extremely hot water is required.



Apartment Taco Water Heaters



Especially constructed for use with steam or vapor-heating plants in apartments and other large buildings. It is connected below the water line at the side of the heating boiler, for connection to tanks 320 to 960-gallon capacity.

No.	Tane Below Water Line	With Live Steam	Length Inches	Diam- eter Inches	Conna Ince Tank		Ship- ping Wt. Lbs.	Price Each
4	320	600	$26\frac{3}{8}$	8	2	2	85	\$100.00
5	640	1200	387/6	$11\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	195	200.00
6	960	1800	403/6	$13\frac{1}{2}$	3	3	265	300.00

Universal Taco Water Heaters



jections to hold ashes or clinkers. Does not interfere with efficient firing. Nos, 6-9-30 and 6-9-60 are for round boilers with coil openings 6, 9 or more inches center to center.

heater. It has no pro-

Extra bottom tapping accommodates distances greater than 9 inches or can be used as cleanout. All tappings are 1 inch.

Nos. 9-30 and 9-60 are made with stude extending through boiler wall and are furnished with washers and locknuts. For round boilers with coil openings 9 inches center to center. Threaded for 1-inch pipe connections.

Nos. 3-30 and 3-60 are for square sectional boilers having cored openings 3 inches center to center. All tappings are for 1-inch iron pipe. Also for use with hot air furnaces.

	-	Shipping		
	Cap.	Weight	PRICE,	EACE
No.	Gals.	Pounds	Malleable	Brass
6-9-30	30	10	\$8.00	\$20.00
6-9-60	60	17	14.00	35.00
9-30	30	10	8.00	
960	60	17	14.00	
3-30	30	10	8.00	
3-60	60	17	14.00	

Hot Water Storage Tanks



For vertical or horizontal installation.

Heads are flanged and dished. All openings have welded threaded flanges, insuring perfectly straight threads.

Price includes standard tappings as shown. Additional number of special tappings, manholes, handholes and coils are extras and quoted upon application.

Standard, Single Riveted

Tested to a hydrostatic pressure of 100 pounds and guaranteed for 65 pounds working pressure per square inch.

S	ER		App. Ship.				Ske	et wa	Regu-	App.	
Diam	Lgth.		Wt.	Price		Cap.				Wt.	Price
In.	Ft.	In.	Lbs.	Each		Gal.	In.	Ft.	În.	Lbs.	Each
20	4	11/2	270	\$94.00		315	36	6	2	700	\$206.00
20	5	$1\frac{1}{2}$	310	104.00		365	36	7	2		241.00
24	4	$1\frac{1}{2}$	320	109.00		420	36	8	2	870	256.00
24	5	11/2	380	123.00		525	36	10	2	1030	293.00
24	6	$1\frac{1}{2}$	440	134.00		430	42	6	2	890	276.00
30	4	2	430	143.00		500	42	7	2	980	310.00
30	5	2	500	158.00		575	42	8	2	1070	333.00
30	6	2	555	173.00		720	42	10	2	1250	375.00
30	7	2	630	196.00		865	42	12			415.00
30	8	2	700	211.00		1000	42	14			468.00
	Diam In. 20 24 24 24 24 30 30 30	In. Fi. 20 4 20 5 24 4 24 5 24 6 30 4 30 5 30 6 30 7	SIZE blank lar blank lar	Diam.lgth, Open, In. Wt. Lbs. 20 4 1½ 270 20 5 1½ 310 24 4 1½ 320 24 5 1½ 380 24 6 1½ 440 30 4 2 430 30 5 2 500 30 6 2 555 30 7 2 630	Size Jar Ship S	Size Ship. Ship. Price In. Ft. In. Lbs. Price Each	Size Ship Ship	Street Ship. Diam.light. Open. Ship. Price Each Cap. Diam.light. Cap. Diam.light. Cap. Diam.light. D	Size Ship. Ship.	Size Ship Ship	Size Ship. Ship.

Extra Heavy, Double Riveted

All extra heavy storage tanks are tested to a hydrostatic pressure of 150 pounds and are guaranteed for a working pressure of 100 pounds per square inch.

		L/G	gu-		negu-						
	Size		0.2°			Siz	2002	lar			
Cap.	Diam. Le	rth. Or	en. Wt.	Price	Cap.	Diam.			W+	Price	
Gal.	In. F	t. I	n. Lbs.	Each	Gal.	In.		In.	Lbs.	Each	
120	0.4	= 1									
120		5 1		\$137.00	500	42	7	2	1260	\$390.00	
140	24	6 1	1/2 440	155.00	575	42	- 8	2	1400	420.00	
180	30	5 2	520	182.00	720		10		1660	480.00	
220							_	_			
			590	198.00	865	42	12	2	1910	540.00	
250	30	72	660	224.00	1000	42	14	2	2180	614.00	
295	30	8 2	720	242.00	750	48	-8		1690	510.00	
315		6 2	920	264.00				-			
					940		10	3	1960	580.00	
365	36	7 2	1030	300.00	1130	48	12	3	2250	650.00	
420	36	8 2	1160	328.00	1300	48	14	3	2570	715.00	
525	36 1	0 2	1380	385.00		-	- 100				
		-			1500	-	16	3	2860	800.00	
430	42	6 2	1140	345.00	1700	48	18	3	3150	870.00	
				C	oils						
Same on Ma Sine Dane E.											

					-	0110					
SIZE	OF	No.	Size	PRICE	EACH	SIZE		No.	Size	· Down	T3
				TO LINEOUS				290.			EACH
TA		of	Coil	Black	Galv.	TAR	Ø16.	of	Coil	Black	Galv.
In. x	TP4	Pipes	In.	Pipe	Pipe						
ALL: A	T. 0.	1 1500	THE.	Tibe	ribe	In. x	Ft.	Pipes	In.	Pipe	Pipe
20	4	4	1	\$20.00	625 OA	20	-		et 1	-	
20	_	120	4	\$29.00	\$35.00	36	6	4	14	\$51.00	\$62.00
20	5	4	1	30.50	30 EA	20	-	4			
	_	-		30.30	38.50	36	7	4	15	54.00	66.00
24	4	4	11	35.50	42.00	36	8	4	71	FR FO	
	_	-				30	0	4	11	57.50	70.00
24	5	4	11	37.00	45.00	36	10	4	4 1	04.00	WO
	_	_	-			30	10	4	13	64.00	78.00
24	6	4	11	38.50	48.00	42	6	A	11	51.00	60.00
	-	4					0	*X	T-3	31.00	62.00
30	4	4	14	35.50	42.00	42	7	A	11	54.50	00 00
	_	-					-	*35	T-2	04.00	66.00
30	5	4	13	37.00	45.00	42	8	4	11	57.50	70.00
	-						O	-35	12	07.00	70.00
30	6	4	11	38.50	48.00	42	10	4	14	64.00	70 00
0.0	-	A								04.00	78.00
30	7	4	13	40.00	51.00	42	12	4	14	70.50	85.00
00	-	4	- 3					-32	1.2	10.00	00.00
30	8	4	11	41.50	54.00	42	14	A	71	77.00	93.00
-	A II		78					- E	12		33.00
F	A III	81268	can	he ture	richad ir	Linne	No. D	hima	/T '	D CI	

All sizes can be furnished in Brass Pipe (I. P. S.). Prices upon application

	ics up																
D . E	xtras	for	St	anda	rd	a	nd		Ext	tra	ı l	He	a	٧y	,	Tank	8
Price,	Z -11	ach F	lan	ge												each	\$8.00
66	$2\frac{1}{2}$	**	***													46	8.00
ш	3	ш	44														9.00
66	31/2	46	66														9.00
44	4	u	66														
44	Hand	holos	in	Han	å ' '			* 1		• •			• •		• •	- 46	10.00
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44	Manl	1	и	Shel	Ļ.,			٠.						p b		. 44	8.00
**	wani	loles	"	Hea	d.,			0. 0					٠.			. "	30.00
**	**		44	Shel	١.,											. "	45.00

No. 906 Radiator Shields



Can be fitted to any make of radiator, as the brackets can be shifted for varying con-structions. Does not interfere with the operation of the radiator valves.

Trimmings furnished: Two cast iron top brackets, two adjustable hangers, with threaded rod, knob and cast plates, four loops, and bolts.

Bottom loops on shield keep shield proper distance from the radiator. No hangers are furnished for bottom loops. No. 26 gauge material regularly furnished. Shield sets 7 inches off the floor.

Regular Pattern-For Radiators 5 Sections or Less

			PRIC	E. EACH		
Height	•		Brass with		Black	Galv.
Radiator			Galv.	All		Painted or
Inches	Black	Galv.	Backs	Brass	Bronzed	Bronzed
26	\$6.00	\$7.20	\$34.00			
	4			\$36.00	\$8.00	\$9.20
32 and 38	6.40	7.60	34.80	38.00	8.40	9.60
44	6.80	8.00	35.20	39.20	8.80	10.00
						10.00
	For	Hadiato	rs Over	5 Section	ns	

Add for Each Additional Section. \$.20 .24 . Add \$4.00 to above prices for

Black and Galvanized Vapor

Add \$12.00 to list for Brass Vapor Pan.

In ordering indicate — (1) whether single, two, three, four column or window radiation; (2) name and height of radiator; (3) number and length of sections.

Additional net charge for



Vapor Pan Withdrawn

No. 908 De Luxe All-steel Radiator Covers



Air currents passing over radiators carry the dust and dirt always present in the air. If these currents are allowed to follow their usual course over radiators, this dust and dirt will eventually be deposited on walls, drapes and ceilings. The De-Luxe Cover prevents this as it is so constructed with back shield and deflecting plate that the currents of air are deflected out into the room.

The cover is constructed from full furniture steel with a 2-inch flange on all four sides. To assist radiation, the front of the cover is opened in large squares, 1½ inches diameter. The corners are electric and acetylene welded so the cover is one solid piece of heavy smooth steel. Covers are made to fit any

type of floor or wall radiator.

Covers are finished, according to specifications, to match the furniture of the wood trim of the room. The enamel wood finishes applied to the cover are smooth, beautifully grained and lasting. Mahogany, either light, dark or brown, and walnut are particularly attractive, as is French grey enamel, a soft toned finish that will harmonize well with any room done in neutral shades.

Price, No. 908 for Radiator 30 Inches Long or Less. each \$20.00 for Each Additional Inch in Length "

Arco Packless Radiator Valves



These valves cannot leak.

They are permanently tight against the passage of water, steam or even air.

The Leakproof feature is a special molded ring with metal core held under compression by spring.

The non-breaking composition handle will not work loose. One smooth turn opens or closes valve.

Has composition disc of highest quality.

For hot water a circulating hole is drilled.

Angle

Size Inches 1/2 3/4	•	Price Each No. 988 Steam \$3.70 4.30 5.10
$1^{1/4}_{1^{1/2}}$		6.40 8.40 13.60

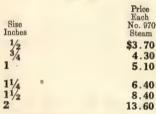


For hot water order No. 988A.

Globe

No. 988 Angle





No. 970 Globe

For hot water order No. 970A.

C	٦r	n	•

Size	PRICE !	
Inches	No. 955 R. H. Corner	No. 960 L. H. Corner
1/2	\$4.10	\$4.10
3/4	4.75	4.75
1	5.60	5.60
11/4	7.05	7.05
11/2	9.25	9.25
2	15.00	15.00



For hot water order No. 955A or 960A.

No. 955, Corner

No. 968 Fractional



The fractional type Arco Packless Valve is the same as the steam type except with lever handle and dial equipment and the calibrating cone and disc.

The calibrating cone is shaped to give accurate control of vapor flow.

The maximum port opening can be permanently adjusted after installation. The stop fastened to the dial can be moved to the required position by loosening cap.

***		-	GI.
Size .	Pri ce	Size	Price
Inches	Each	Inches	Each
3/4	\$3.70	1	\$5.10
3/4	4.30	11/4	6.40
**		- /4	0.40

Nos. 72 and 57 Detroit Radiator Valves For Steam, with Union and Composition Disc



Has non-breakable, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

P	lo. 72, Angle			No. 57, Glob				
ime n.	Price Each	Size In.	Price Each	Size In.	Price Each			
/2	\$3.70	1	\$5.10	11/2	\$8.40			
/.	4 30	11/.	C 40	0 / =	10.00			

Nos. 32 and 37 Detroit Radiator Valves For Steam, with Union and Composition Disc



Equipped with a new kind of non-break-able, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

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No	32. R.	H. Corner				No.	37, L. H.	Connon
Sise In.	PRICE, R. H. Corner	EACH L. H. Corper	Sise In.	PRICE, R. H. Corner	EACH L. H. Corner	Size In.	PRICE, R. H. Corner	
$\frac{1}{2}$ $\frac{3}{4}$	\$4.10 4.75	\$4.10 4.75	1 11/4		\$5.60 7.05	$\frac{11/_{2}}{2}$	\$9.25 15.00	\$9.25 15.00

Detroit Radiator Valves



Quick-opening For Hot Water Angle Pattern—With Union and Composition Disc

Has an elliptical plate set at a 45-degree angle attached to stem. By revolving stem half turn to left valve is opened; half turn to right closes it.

	PRICE,			PRICE,	EACH
C	No. 101	No. 106	6 12	No. 101	No. 106
Size	Round	Lever	Size	Round	Lever
Inches	Handle	Handle	Inches	Handle	Handle
1/2 3/4	\$3.25	\$3.25	11/4	\$5.75	\$5.75
3/4	3.70	3.70	$1\frac{1}{2}$	7.30	7.30
1	4.50	4.50	2	12.00	12.00

For Six In 1, 3, 3

No. 373 Detroit Radiator Gate Valves

For Steam or Hot Water, with Union

Size In.	Price Each	Size In.	Price Each
1/2 3/2	\$3.65	11/4	\$6.60
3/4	4.25	11/2	9.00
1	5.20	2	12.80

No. 132 Detroit Union Elbows

Size In.	Price Each	Sine In.	Price Each
3/2	\$1.75 2.00	11/4	\$3.30 4.25
1 "	2.50	2 2	7.20



Lock and Shield Radiator Valves

	Size Valve Inches	Price Each N. P Keys	.Size Valve Inches	Price Each N. P. Keys
	1/2	\$.50	11/4	\$.50
F. 1	1 4	.50 .50	2 2	.50 .50

Lock and shield equipment can be furnished with any regular pattern of radiator valves at additional charge.

Composition Valve Handles



No. 1 Penberthy Hydraulic Vacuum Generators

For Return Pipe Steam Heating Systems



The prime function of this generator is to pull the air from the system. Its operation is simple and semi-autoriation. Pull the chain which is connected to the lever. This opens a valve which allows the water from city mains to pass through the generator. This water, passing through the generator and into sewer, also pulls the air from the system, thereby establishing a vacuum throughout the entire heating system.

As there is now no air to obstruct the passages, the steam rushes in to fill the vacancy caused by the removal of air, with the result that every radiator is instantly filled with steam. As the steam passes through the radiators, the instantaneous change in temperature causes the valve on the outlet end of the radiator to close automatically thus holding steam on the radiator.

The generator shuts off automatically when proper vacuum is established. When you want to accelerate your heating, you turn it on. Otherwise it is not in operation, and consequently, it is not running maintenance expense, as it would if it were wholly automatic.

Water Connectioninches	3/8
Water Connection inches Discharge Connection inches Suction Connection inches	3/4
Suction Connectioninches	2
Price, No. 1. each	\$75.00

Compression Radiator Air Valves No. 4 with Loose Key Key



Daine No. 4 1/2-1	Mi-led whated	* **
Frice, No. 4, /8-inch	, Nickel-platedeach	\$.00
" Extra Keys fo	r No. 4	.10

Expansion Air Valves

No. 5561



For venting coils on high pressure in connection with dry kilns, laundries, etc.

Price, %-inch.....each \$1.60

Ideal Quick Vents



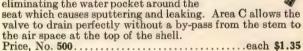
For venting mains, long runs of pipe, indirect stacks, drop risers, etc., where a large amount of air must be expelled quickly. Will benefit all low pressure steam jobs by venting entire piping system and thereby heating radiators quicker under less pressure. Operates by volatile liquid contained within expansible member which has diaphragm at top and bottom giving full movement of stem. No adjustment. All metal. Very sensitive. Will last indefinitely. Does not close against water.

Venting port, \$\frac{3}{3}\tau-\text{inch diameter. Valve connection,} \frac{3}{4}\text{-inch pipe thread.} Can be furnished with \$\frac{5}{6}\text{-inch thread.} Nickeled finish. Shipping weight each, \$\frac{1}{3}\text{ pound.}

No. 500 Ideal Airid Siphon Valves

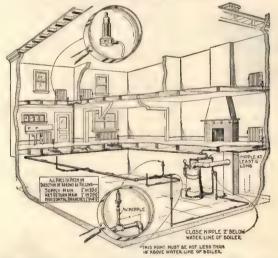
The valve operates thermostatically by the evaporation of a volatile liquid contained within the float forcing outward the diaphragm which forms the bottom of the float, raising the pin and instantly closing the valve. A slight cooling relieves the internal pressure and opens the valve.

Under flooded radiator conditions the valve vents without leak because the large separating chamber A allows separation of the air and water. The seat at B requires no guide for the pin, thus eliminating the water pocket around the seat which causes sputtering and leaking



Hoffman Air Valves

Typical Installation of Nos. 2 and 6 Valves On One-Pipe Steam Heating Plants Only



To enjoy to the maximum heating comfort and economy it is necessary only to equip the radiators all over the house with No. 2 Hoffman Air and Vacuum valves, and if there are one or more air valves on the piping in the cellar these must also be changed. The No. 6 Hoffman Vacuum Valve is best suited for this purpose as it allows those radiators furthest away from the boiler to heat up just as quickly as the nearest ones.

The use of even a single No. 2 Hoffman Vacuum Valve on the worst radiator will enable that particular radiator to stay warm after steam pressure has diminished, but with air leaking in at other points the last word in heating comfort and economy will not be received unless every valve is a No. 2 Hoffman.

No. 1 Hoffman Siphon Air Valves



This valve is designed for low pressure gravity systems of the one pipe Through its use all air is vented from the radiator without loss of steam, maximum heating efficiency is assured and leakage from water-logged radiators prevented. After contact of water with valve the syphon drains all water from the valve and venting occurs without the slightest spit even if the radiator is under pressure.

Maximum guaranteed operating pressure, 10 pounds.

Has 1/8 inch radiator connection.

No. 2 Hoffman Syphon Air and Vacuum Valves

This valve is similar to the No. 1, but in addition, when the radiator is once freed from air, return of air through the vent port is prevented.

Normally air vent port is wide open until steam comes in contact with the heat sensitive fluid in the float, expanding the flexible diaphragm, raising the float and closing vent port. Air check prevents return of air until the vacuum formed in the valve permits atmospheric pressure, acting through chamber port to force diaphragm upward, raising the float and doubly closing the vent port.

With this valve an ordinary one-pipe steam system may be changed into vacuum type. Maximum guaranteed operating pressure, 10 pounds. Radiator connection, 1/8 inch. Price, No. 2..

No. 3 Hoffman Air Line Valves



A compact, well constructed valve for air line, or as they are frequently termed, Paul Systems.

It is sensitive in action and closes the instant steam fills the radiator.

No adjustment is necessary either before or after installation.

Radiator connection, 1/8 inch; air line connection, 1/4 inch.

Maximum guaranteed operating pressure, 10 pounds.

No. 4 Hoffman Quick Vent Valves

For use in venting mains, risers, vento stacks, coils, etc.

All air is freely vented through a 1/8-inch vent port without steam loss, but valve does not close against water.

Standard connection, 3/4 inch.

Supplied with 1/4-inch connection when so

Maximum guaranteed operating pressure, 10 pounds.

Price, No. 4. each

No. 5 Hoffman Quick Vent Float Air Valves

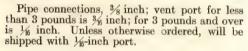


This valve installed on the end of return mains in one-pipe gravity systems causes steam to first flow to end of main, then into radiators at a uniform rate, so that radiators distant from boiler will receive their supply of steam as quickly as those close to boiler. For quick vent-ing where water may be a factor. Especially well adapted for use in venting ends of steam mains, ends of dry return mains, indirect radiators, Blast, Vento or Aerofin Stacks, hot-water generators, low pressure feed water heaters, dryers and drums, etc. It closes instantly when steam or water comes into contact with float. Pipe connection, 3/8 inch; vent port for less than 3 pounds is 3/6 inch; for 3 pounds and over is 1/6

inch. Unless otherwise ordered will be shipped with 16-inch port. Maximum guaranteed operating pressure, 10 pounds.

No. 6 Hoffman Quick Vent Float Air and Vacuum Valves

The No. 6 has a diaphragm in the base of the valve which holds the vent port closed when the venting ceases and prevents intake of air through the valve port. The valve is used for venting return mains of small vapor-vacuum systems or wherever return of air to the system must be prevented.



Maximum guaranteed operating pressure, 10

Price, No. 6each

No. 10 Hoffman Vapor Valves



Used for venting the return mains in vapor systems or for other conditions where a large venting capacity is required.

For preventing the escape of water the valve has a large buoyant float which has a double valve, one disc controlling a 34-inch vent port and the other an auxiliary port 36 inch in diameter. When water recedes from the valve and pressure is maintained the %-inch port is opened first and as the air pressure is relieved, the 34inch port opens and full venting area is obtained. The thermostat is located above the float chamber and controls the vent port upon contact with steam.

Maximum guaranteed operating pressure, 15 pounds. Pipe connection, ¾ inch. Price, No. 10, Nickel-plated All Over.....each

No. 11 Hoffman Vapor Vacuum Valves

The No. 11 vapor vacuum valve is similar in construction to the No. 10 valve with the addition of a check valve on the vent port which prevents the return of air to the system through vent port.

It is widely used for venting the return mains of vapor-vacuum systems or where the return of air to the system after having been vented is not desirable.

Maximum guaranteed operating pressure, 15 pounds.

Has 34-inch connection.

Price, No. 11.....each



No. 7 Hoffman Adjustable Modulating Valves



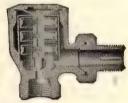
For use in vapor or vapor vacuum systems. Its chief feature is the easy and accurate setting of the valve port to fit radiators of various sizes. Is made in one size, 34 inch only, having a range of adjustment up to 200 square feet of radiation.

Adjustment is simple; loosen locknut; turn valve handle until proper number of graduations are visible on the dial plate; then tighten locknut. The valve handle may then be set to admit sufficient steam to heat a quarter, half, three quarters or entire radiator.

Regularly supplied with lever handle. It can be furnished with wood wheel, lock shield, closed top, without extra charge. Price, No. 7, with \(^3\)\(^4\)-Inch Connections each . . .

Nos. 8 and 9 Hoffman Return Line Valves

These valves or radiator traps relieve air and condensation from radiators in vapor or vapor vacuum systems without steam loss. Installed on systems where steam is supplied through a reducing valve, proper trap operation is assured, should the reducing valve fail to function, because of their wide operating pressure range.



Maximum guaranteed operating pressure, 50 pounds. No. 8 valve is furnished in angle, straightway and right and left-hand offset patterns. Capacity is 200 square feet of direct cast iron radiation.

No. 9 valve is made in angle and straightway patterns only. Capacity is 600 square feet of direct cast iron radiation.

Price, No. 8, ½-Inch. each
Price, No. 9, ¾-Inch. each

No. 17 Hoffman Radiator Valves



For vapor or vacuum installations where modulation is not required. Made in ³/₄-inch size angle pattern only; suitable for radiators up to 200 square feet. May be turned from open to shut position or vice versa with one turn of handle. Action is free, with little friction due to expect the square feet. little friction due to construction of disc holder. Stem is not threaded but is squared on end, fitting into a square

sleeve in lead screw, latter being approximately 1½ inches in diameter. The lead screw is a hard drawn brass shell with quadruple rolled threads that engage in the valve body. Regularly supplied with lever handle. Wood wheel handles, lock shields, closed tops, extended stems, or chain pulls can be furnished.

Price, No. 17.....each

No. 18 Hoffman Return Line Valves

For radiator units not over 100 square feet direct cast iron radiation and pressure not exceeding 15 pounds. Thermostat consists of one chamber made by two diaphragms separated by a space ring. In center of bottom diaphragm valve pin is attached, j oint being expanded and made tight. Thermostat is held in its cage by a pin at-



tached to top diaphragm.

Thermostats are interchangeable without requiring adjustment and will operate with the same degree of sensitiveness.

Made in ½-inch size only, and furnished in angle, straightway, right and left-hand offset patterns.

Price, No. 18.....each

No. 12 Hoffman Blast Traps



Especially adapted for draining condensation from indirect radiators, blast, Vento or Aerofin stacks, unit heaters, ends of steam mains and risers, driers and drums, hot-water generators and laundry ma-chinery. Where the operating pressure is not in excess of 30 pounds this valve will take care

of large amounts of con-densation. In functioning it distinguishes between steam, heated air and water of condensation, giving free discharge of

air and condensation.

It relieves condensation immediately upon its arrival at the trap regardless of the water temperature. Combined with the float is a thermostatic member which overcomes the chief difficulty with float traps by automatically relieving air as

well as condensation from the system.

The normal position of the valve is open and this is held until steam reaches it when closure takes place. If small quantities of condensation flow to the trap the thermostat functions and relieves the water, but if larger amounts of condensation, beyond the capacity of the thermostat reach the trap, the float lifts the thermostat from its seat and maximum capacity is obtained.

Nominal Capacities Pressure per Sq. In.

	1/2	1	2	3	4	5
Capacity per Hr.	800	1000	1500	1800	2000	2500
*Capacity Radia-						
tion sq. ft.	3200	4000	6000	7200	8000	10000
*Based on 1/4 pound	d cond	lensatio	n per l	hour pe	r squar	re foot.
Maximum operation	ng pro	ggiiro S	nour	nda -	_	

Maximum operating pressure, 30 pounds. Capacities for over 5 pounds pressure on application. With strainer: Inlet connection, 1 inch; outlet, 1 inch. Without strainer: Inlet, 11/4 inches; outlet, 1 inch.

Price, No. 12.....each
If without Strainer, Deduct.....

Hoffman Ther-Kompo Gages



Measures pressure up to 30 pounds vacuum to 30 inches and temperature to 225 degrees. Pressure is registered in ounces up to 5 pounds. Vacuum is recorded in half inches up to 10 inches.

Temperature of steam or vapor is indicated on the thermometer to correspond with the pressure or vacuum.

Used in Hoffman Controlled Heat installations or for one pipe gravity systems equipped with Hoffman No. 2 Siphon Air

and Vacuum Valves, it indicates when the plant is operated at temperatures above and below 212 degrees. Pipe connection is 1/2 inch and length of thermometer well such that gage may be installed in a 1-inch standard cast iron reducing tee. Do not use a gage siphon with the Ther-Kompo Gage on a low pressure heating plant, (less than 15 pounds). each

Hoffman Vapor Damper Regulators



Has compensating or balancing plate, and is practically frictionless; it is sensitive and operates on slight changes in pressure. It is automatic in operation and after it has once been set at the desired pressure requires no attention. It controls the dampers, and responds immediately, accelerating or retarding the fire to meet the change in demand for steam from the radiators. It will fit any type boiler. Equipped with lever, weights, chain and pulleys.

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Hoffman Controlled Heat Equipment



Differential Loops

The differential loop is an extremely simple, efficient device, which prevents water from backing up in the return main and at the same time maintains a constant differential pressure between steam and return mains whenever the pressure exceeds a predetermined amount.

Standard No. 1 and No. 2 loops are intended for systems where the low point in the dry return is not less than 24 inches above boiler water line. No. 3 and No. 4 loops require a minimum differential of 30 inches.

Loop Radiation No. So. Ft. Loop No. Price Each Radiation Sq. Ft. Sq. Ft. 1 1 to 2000 3 3501 to 7500 2 2001 " 3500 4 7501 " 15000

Hoffman Differential Loops are sold as a part of Controlled Heat Equipment. Prices on Loops, or Basement Specialties, for use otherwise, are quoted on application, and sold only when we approve plan of installation.

Radiator and Basement Specialties

Special attention is directed to the simple methods of figuring on vapor or vapor vacuum specialties.

It is only necessary to obtain data as to the number of radiators, the total amount of radiation and information as to whether steam mains or risers are dripped through return line valves. Then refer to the following table.

Radiator Specialties

Hoffman adjustable modulating valve, 3/4-inch capacity up to 200 square feet direct radiation.

Hoffman return line valve, ½-inch capacity up to 200 square

feet direct radiation. Price.....per radiator

Basement Specialties

For installations up to 1000 square feet direct radiation: 2 No. 18 Hoffman Return Line Valves, for venting Steam Mains into dry returns

Hoffman Differential Loop

No. 6 Hoffman Float Air and Vacuum Valve

1 Hoffman Damper Regulator 1 Hoffman Ther-Kompo Gage

Price.... per set Class A

For installations up to 2000 square feet direct radiation:
2 No. 8 Hoffman Return Line Valves, for venting Steam

Mains into dry return

1 No. 1 Hoffman Differential Loop
1 No. 11 Hoffman Vapor Vacuum Valve
1 Hoffman Damper Regulator
1 Hoffman Ther-Kompo Gage

Class B

For installations of 2001 to 3500 square feet direct radiation: 3 No. 8 Hoffman Return Line Valves, for venting Steam Mains into dry return

No. 2 Hoffman Differential Loop No. 11 Hoffman Vapor Vacuum Valve

Hoffman Damper Regulator 1 Hoffman Ther-Kompo Gage

..... per set Class C

For installations of 3501 to 7500 square feet direct radiation: 4 No. 8 Hoffman Return Line Valves, for venting Steam Mains into dry return

1 No. 3 Hoffman Differential Loop 1 No. 11 Hoffman Vapor Vacuum Valve

Hoffman Damper Regulator 1 Hoffman Ther-Kompo Gage

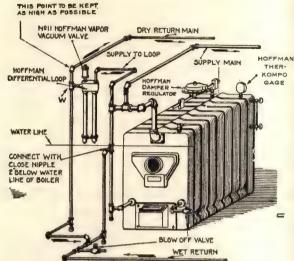
Where 50-foot risers or ends of 100-foot steam mains are dripped through return line valves, add \$6.00 for each No. 8

or \$8.00 for each No. 9 valve. For longer risers or steam mains add \$30.00 for each No. 12 valve. Where more than one boiler is used, add \$37.00 per boiler

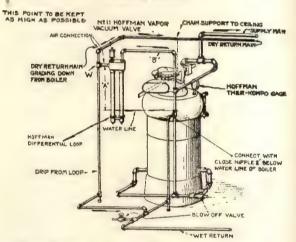
for additional specialties required.

Special or larger installations than indicated above quoted on application.

Hoffman Controlled Heat Equipment Typical Installation



Typical Method of Installing Hoffman Equipment on Sectional Boilers



Typical Method of Installing Hoffman Equipment on Round Boilers

Hoffman Controlled Heat has established an entirely new

standard of heating efficiency.

It is now installed in hundreds of buildings, from the smallest homes to the largest skyscrapers, and is working with a flexibility of control, simplicity of operation and economy of fuel hitherto unknown in the heating world.

The most efficient gravity return steam heating system is that one which eliminates air to the greatest degree prevents its return, and also provides means for promptly returning the water of condensation to the boiler.

Steam is the most efficient and economical heat conveyor known today, and when properly controlled is the last word in heating comfort.

No more radiation is required in Hoffman Controlled Heat than for an ordinary steam installation, and no larger boiler grate area, or heating surface is required than used for steam or hot water installations.

Controlled heat is low pressure gravity steam heat, measured in ounces instead of pounds, with two pipe lines; one a steam flow line, the other a return air and condensation line.

Hoffman devices transform what would be an ordinary steam heating system into Hoffman Controlled Heat and are six in number, as follows: No. 7 Hoffman Adjustable Modulating Valve; No. 8 Hoffman Return Line Valve No. 11 Hoffman Vapor Vacuum Valve; Hoffman Differential Loop; Hoffman Vapor Vacuum Valve; Hoffman Differential Loop; Hoffman Differential Loop; Hoffman Vapor Vacuum Valve; Hoffman Valve; Hoffma man Damper Regulator and the Hoffman Ther-Kompo Gage.

Prices upon application.

Honeywell Heat Generators



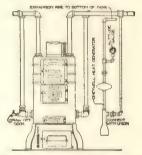


Position of Mercury and Water When Generator is Producing no Pressure

Position and Action of Mercury and Water When Generator is in Complete Operation Producing 10 Pounds Pressure

These generators are designed to meet the demand for a device to quicken the circulation in hot water heating jobs.

When connected to the expansion pipe of an ordinary gravity plant, this generator seals the circuit and permits the generation of a slight pressure up to 10 pounds, at which point it relieves itself through the operation of a mercury seal, eliminating any element of danger.



Showing Generator Attached to Hot Water Boiler

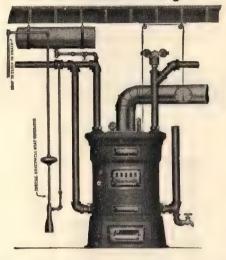
The pressure created by this generator will remedy any unsatisfactory job of hot water heating where the radiation is insufficient, the piping too small for gravity, the circulation sluggish, causing large fuel consumption, or where the water boils easily from quick firing, providing, of course, the boiler is large enough to supply the heat. It greatly improves jobs which contain long horizontal mains, or where the radiation is all on the first floor.

In new work it permits a reduction in radiation, and smaller piping as advocated in the Honeywell system, the system of low cost and high efficiency. It is positive and automatic, is sold under the strongest guarantee, will last a lifetime, and cannot get out of order.

No.	For Radiation Square Feet	Size Inlet Inches	Size Outlet Inches	Price Each
1	1200	3/4	1	\$25.00
2	2500	1	1	35.00
3	3500	11/4	$1\frac{1}{4}$	50.00
4	10000	$1\frac{1}{4}$	$1\frac{1}{4}$	65.00

For bungalows, one-story, or flat roof buildings or for any buildings where it is difficult or unsightly to place the expansion tank of hot water heating plant above the radiators or where it is liable to freeze, a tank-in-basement method is desirable. A special Honeywell Heat Generator is built for the purpose, regularly manufactured in sizes 11, 12 and 13, with stand-pipes of different heights to properly take care of buildings having one, two and three stories and basement, and containing 2500 square feet or less of radiation. Details and description furnished upon application.

Honeywell Tank-in-basement Method of Hot Water Heating



For bungalows, one-story or flat roof buildings where it is difficult to place the expansion tank of a hot water heating plant above the radiators, or where it is liable to freeze, the Honeywell Tank-in-Basement method is recommended.

The principal difference between the regular Honeywell generator and the special Tank-in-basement generators is in the heights of the standpipes. In addition to generating 10 pounds pressure, the special generator holds the water up in the radiators, making necessary higher standpipes and more mercury. The expansion pipe from the top tapping of the special generator is only run to the ceiling of the basement, where it is vented and then dropped to any convenient drain.

It is important with a Tank-in-basement system that the expansion tank be air-tight, a brazed or electric welded air-tested tank with no tappings above the water should be used. On plants containing 600 square feet or less of radiation, a 21-gallon tank should be used; from 600 to 1000 square feet, a 30-gallon tank; from 1000 to 2000 square feet, two 30-gallon tanks or a 40-gallon tank on plants of 1000 to 1400 square feet of radiation. Larger plants in proportion.

The water in any Tank-in-basement system is held up in the radiators by artificial means and must not boil. Formation of steam would force the water down and out through the relief pipe. No. 30 Honeywell Water Regulator controls the heater drafts by means of water temperature, and is more reliable than regulation by pressure. As long as there is fire in the boiler, any temperature of the water in the system, between 100 and 220 degrees, may be maintained by adjusting the weights on the lever. A change of 2 to 3 degrees will cause the regulator to open or close dampers.

Honeywell Tank-in-basement equipment consists of a Special Honeywell Heat Generator and a No. 30 Honeywell Water Regulator.

For plants containing 2500 square feet or less radiation.

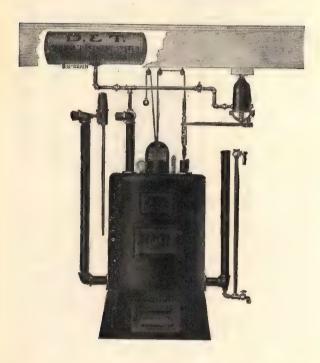
No.	Size Bldg.	Price Each
11	1-story	\$48.00
12	2 "	52.00
13	3 "	56.00

Equipment for plants containing more than 2500 square feet of radiation or buildings having more than three stories will be furnished upon request.

Tank-in-basement systems may be put in, using the standard generators installed in the same way as the specials, except that the expansion pipe must be run to a point a little above the highest radiator in the job, where it is vented and connected to any available drain. This standpipe being full of water balances the column of water in the system. The standard generator installed in this way has nothing to do but develop its pressure of 10 pounds, which forces the expanding water into the tank in the basement when the temperature inceases.

D & T Self-regulating Hot Water Heating Systems

Original Tank-In-Basement System



The D & T Tank-In-Basement System can be used on all sized installations of hot water heating from a one-story bungalow with two hundred square feet of radiation, to a four-story building with twenty-five thousand square feet of radiation.

The features of the D & T System are placing the expansion tank in the basement where it will not freeze, eliminating dangerous overflows, or stand pipes, furnishing automatic damper regulation, from one hundred degrees to two hundred forty degrees governed by the expansion and contraction of the water in the entire heating system.

The equipment consists of one pressure controller, one damper regulator, one expansion tank, one special pressure gauge, adjustment plate, chains and pulleys.

No. 2 Equipment

For 1, 2 or 3-story	buildings	up to 1400	square feet	radiation.
Price				\$60.00

No. 3 Equipment

For a	3-story	buildings	up to	1400	square	feet	radiation.	
Price							\$60	. 00

No. 4 Equipment

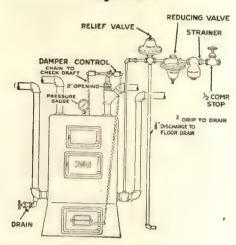
For	4-story	buildings	up to	1400	square	feet	radiation.
Price.							\$60.00

Extra Tank Capacity

For installations containing more radiation than listed above, an extra charge will be made for the additional expansion tank capacity.

When ordering, state number of square feet of radiation and stories of building.

Mueller Automatic Hot Water Heating Systems



The original hot water heating plant depended for its carculation entirely on gravity and has at its highest point an open tank to provide for the expansion of the water in the system when heated. This tank was sometimes placed in the attic where there was the possibility of its freezing. Often it was installed in the bathroom or chamber, making an unsightly object in an otherwise pretty room.

The next step in advance was the closed or tank in the basement system, which speeded up the circulation by putting a pressure on the system but depended on an air cushion in the tank for its safety. It was satisfactory until the air leaked out of the tank or was absorbed by the water when the system became water-logged and a dangerous pressure was developed.

To meet the demand for a pressure system that is free from danger, positive in circulation and easy to install, a water reducing valve and relief valve have been especially designed and perfected for this purpose. These valves have been combined with a damper control and when installed on a hot water plant make a most satisfactory system.

When the system is filled the reducing valve closes as soon as the pressure in the system reaches 10 lbs. As the water is heated the pressure increases in proportion to the increase in temperature of the water in the system. When a pressure of 25 lbs. is reached the relief valve operates allowing a few drops of water to escape. At this point the water has reached a temperature that is sufficient to heat the building and the damper regulator operates automatically checking the fire. As the temperature of the water decreases the pressure also decreases until it reaches 10 lbs. when the reducing valve automatically opens allowing just enough fresh water to enter the system to replace that which was discharged through the relief valve. It is a well known fact, admitted by all authorities on heating, that fresh water in a hot water heating plant promotes circulation. In the "Mueller System" just enough water is admitted daily to keep it fresh. The rate of circulation is also increased over that of the open tank due to the fact that a pressure of from ten to twenty-five pounds is on the system at all times. The absence of a tank of any kind in the system saves labor and material as well as doing away with the possibility of freezing or rusting out of tank.

Always leave the stop cock in supply pipe open and under no condition place a valve of any kind between the relief valve and the boiler. When filling system first close all air valves on the radiators and open supply cock and when the gauge shows 10 lbs. begin to let the air out of the radiators. The reducing valve will automatically fill the system as the air is discharged through the air valves.

Prices and further information upon application.

Minneapolis Heat Regulators

The Minneapolis Heat Regulator devices consist of an attractively designed thermostat (a mechanical automatic thermometer) placed on the wall of living room and connected by a small concealed electric cable to motor in the basement, the No. 65 Limit Control and No. 70 Pressurestat. The motor performs the work of operating drafts, dampers, etc., of the heating plant.

Model 77 Eight-Day Thermostat



The operation of Model 77 Eight-Day Thermostat is simple. The clock makes 2 actions, automatically lowering the indicator at night and raising it in the morning. The clock has a jeweled movement with 7 rubies and sapphires, with genuine bi-metallic balance. The finest Breguet hairspring is used. All pivots and pinions are polished, every part is extra heavy, insuring rigidity to the movement, long life and excellent time-keeping qualities. The clock is adjusted to heat and cold and to isochronism. Adjustment of the time set on the thermostat can be made almost instantly and the automatic throw of the indicator is adjustable either

backwards or forwards.

The Model 77 Thermostat is finished in brushed silver.

Model 47 One-Day Thermostat

Model 47 One-Day Thermostat is equipped with a reliable 24-hour clock, which, when set at night, will change the indicator at any predetermined hour in the morning to the day temperature desired. The clock is easily removed for winding

The Model 47 Thermostat is finished in sand

blast bronze.

Model 55 Thermostat

Model 55 Thermostat is similar to Model 77 with the exception of its clock and finish. It is equipped with a dependable non-jewel clock and is finished in sand blast bronze.

Model 40 Thermostat

Model 40 Thermostat is designed for operation where clock attachment is not necessary or desired, as in case of large residences with hot water heat, for churches, etc., where certain fixed temperature is to be maintained at all times. The Model 40 has the same basic construction as all Minneapolis Thermostats, with only one moving bearing, thus eliminating faulty action and lost motion. Model 40 Thermostat is finished in sand blast bronze.

No. 65 Limit Control



No. 65 Limit Control is used to maintain a uniform temperature in hot water or warm air heating systems and hot water supply systems. Set indicator water stappy systems. Set indicator at desired temperature and when the water starts to go above that temperature, the device automatically checks fires. When the water falls below that temperature, the device advances the fires.

The standard model has a range of 100 to 240 degrees Fahrenheit.

No. 70 Pressurestat

No. 70 Pressurestat is used to maintain uniform pressure in steam and vapor heating systems. It is operated by pressure as the No. 65 Limit Control is operated by water or air temperature.
Standard model has a range of 0 to 10

pounds, but can be furnished up to 125

pounds.

Dual Control

Either the No. 65 Limit Control or the No. 70 Pressurestat can be operated in dual control with the room thermostat. This gives a double check on fuel waste, first by means of the room thermostat and second by means of the No. 65 Limit Control controlling water temperature or the No. 70 Pressurestat controlling pressure.

Minneapolis Heat Regulators

Electric Motor



The basic principles of construction of the Minneapolis. electric non-wind motor have proven their reliability in years of actual use and dependable service. This motor is connected directly to the house lighting circuit and never requires wind-

Motors and transformers encased in a die cast, dust proof aluminum housing, finished in black with nickel trimmings.

Tested and approved by the National Board of Fire Underwriters, and particularly recommended for use with gas, oil or central station heating.

Spring Motor



The power of the Minneapolis spring motor is furnished by a heavy spring, giving the motor ample power to handle the heaviest dampers or valves. One winding of this motor will handle the average heating plant from 1 to 2 weeks. The cover is made of pressed steel with baked enamel finish. Sleeving at shaft openings protects the mechanism from dust or moisture. The motor is provided with safety switch, so that in event of motor

being allowed to run down, the draft will always be left closed on last operation of motor.

Gravity Motor

The gravity type motor is designed for attachment to basement ceiling. Motive power is furnished by an iron weight of ample size to operate the dampers of the average heating plant. A governor regulates the speed of the motor, causing the drafts to be opened and closed slowly. Position of the weight indicates to what extent the motor needs winding. The motor has the usual Minneapolis feature of operating in such manner that when run down, the drafts are always left closed, thereby eliminating the possibility of fire hazard. Motor is



finished in baked black enamel over a casing of pressed 22-gauge steel.

		PRICE, EACH————————————————————————————————————				
		Mo	TOR EQUIPME	NT		
Mod	el Description	Electric	Spring	Gravity		
77	Duplex Thermostat	\$90.00	\$74.00	\$66.00		
55	Non-jeweled Thermostat	80.00	64.00	56.00		
47	One-day Thermostat	68.00	52.00	44.00		
40	Plain Thermostat	61.00	45.00	37.00		
65	Limit Control	60.00	44.00	36.00		
70	Pressurestat	65.00	49.00	41.00		
Pri	ce, Model 65 Limit Control Or	aly	each	\$20.00		
66	" 70 Pressurestat Only	7		25.00		

Honeywell Automatic Temperature Regulators





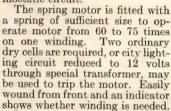
New Type D Electric Motor

Spring Motor

The new Honeywell Type D Electric Motor is the shaded pole type; simple, silent in operation and neat appearing.

It has no armature, armature windings, commutator, brushes, brush holders, brush holder springs or brush holder The rotor is the only primary moving part.

Line voltage is taken into the motor and is automatically reduced to low voltage for the thermostatic circuit.



In operation the gravity motor is similar to the spring motor, except that the motive power is supplied by a 10-pound weight. Gives 20 to 25 operations in the average basement to one weight adjustment.



Type R, 15-Day Jeweled Clock Thermostat





Type S One-day Thermostat

Type R has a jewelled balanced clock of improved mechanical construction, especially developed for thermostatic control. Good appearance and simple design. Clock will automatically lower temperature to any degree at night and automatically raise the temperature at any predetermined time in the morning. Necessary only to wind periodically. Type S one-day is a dependable instrument. Has morning and evening control feature but it is necessary to wind clock once every 24 hours and set indicator back each evening. Type Q plain pattern is like the other thermostats except it has no clock. Used where clock control is unnecessary. Indicator at all times is set by hand.

All are equipped with wall plate making it unnecessary to

handle thermostat when connecting wires.

Type	Type \ Motor	Ther- mostat	Price Each	Туре	Type Motor	Ther- mostat	Price Each
DQ	Electric	Plain	\$60.00	$\hat{\mathbf{SR}}$	Spring	15-day	\$64.00
DS	66	1-day	68.00	GQ	Gravity	Plain	37.00
DR	"	15-day	80.00	GS	66	1-day	45.00
SQ SS	Spring	Plain	44.00	GR	66	15-day	57.00
SS	- 44	1-day	52.00				

With each regulator all trimmings necessary for installation except batteries are furnished. It is best to secure batteries locally because of deterioration.

Honeywell Vaporstats

For Vapor or Steam Heating Systems

The Honeywell Vaporstat is a pressure regulating device for vapor or steam heating systems.

It can be used with any style Honeywell Regulator Motor.

The vaporstat operates on pressure rather than temperature.

When installed on a vapor or steam system, it can be instantly set to control the pressure at any predetermined point.



Type C

Where desired, it can be installed to operate in conjunction with Honeywell Room Temperature Regulators, using the thermostat and motor already installed. In the above case, the wiring arrangement is such that the vaporstat serves as a limiting device in closing the heater dampers, oil or gas valve only when the pressure has reached a predetermined number of ounces or pounds. At all other times the house thermostat is in control of the heat supply.

The vaporstat is compact and offers an attractive appearance. It is threaded $\frac{3}{8}$ inch and is easily attached to existing plants in the same way an ordinary pressure gauge is installed. The instrument is so constructed that if subjected to excessive pressure the working parts will not be damaged.

The Honeywell Vaporstat can be furnished in the following graduations:

Type C1-5 calibrated from 10-inch vacuum to 5 pounds

Type C1-50 calibrated from 0 to 50 pounds pressure.

Type C1-150 calibrated from 0 to 150 pounds pressure.

Price, Type C Vaporstat Only.....each \$20.00

Honeywell Aquastats For Water Temperature Control Type B



Type B

The Honeywell Aquastat is designed to be used in connection with any style Honeywell motor, for controlling the temperature of hot water plants, bake ovens, dryers, vulcanizers, etc.; also used in connection with room temperature regulators for limiting temperature of water in hot water heating systems.

The instrument will operate on the temperature of either air or liquids at temperatures ranging up to 300°. The scale provides for a variation of 100° which is sufficient to take care of almost every requirement. Standard scale, 100 to 200°.

Without extra cost, however, scales can be furnished from 150 to 250°, 200 to 300° or for any maximum or minimum temperature within the 300°.

The aquastat dial is only 4 inches in diameter. The bulb is tapped 3/4-inch, and is connected into top of boiler or tank, or can be set in a tee in the flow pipe near the boiler. The bulb extends approximately 134 inches beyond the threaded portion and can be attached to existing plants.

Wire connections are made to motor as in any regular installation. The motor can be located any distance from the aquastat. The aquastat is furnished regularly for operation on temperature of liquids. For operation on air temperatures the instrument is furnished with perforated bulb at a small additional charge. Either construction can be furnished with bulbs of special lengths at a slight additional charge. These special instruments are sometimes required where the body of the instrument is to remain outside of a dry room for ease of adjustment and where the bulb is to extend through the wall into the dry room. Price, Type B Aquastat Only.....each \$20.00

Type C

If a less expensive unit is desired we can supply the Type C which has the same operating elements but without the glass face, graduated dial or bronze case, at \$12.00.

Prices of special instruments are quoted upon application.

No. 845 Mercoid Thermostats

PATENT PENDING



With Cover Removed

For temperature control in refrigeration, on oil burners, unit heat-

ers, etc.

The Mercoid Thermostat is for use where it is desired to start or stop an electric motor according to temperature changes. Current is thrown on or off direct to motor. No relay or other remote control is necessary. Has many applications such as oil burning apparatus, refrigeration work, control of motors, pumps, fans, etc. Operates by the expansion of a volatile gas contained within a flexible metal bellows. When temperature advances, the bellows expands, tilting the Mercoid, a sealed glass tube containing inert gas and mercury.

When tube is tilted mercury flows to one end making contact within tube. Tilting movement positive and quick acting. Gives accurate

and close regulation. No open arc. No corrosion or oxidation of contacts. A positive safeguard against fire or explosion. Tests show the tube perfect after hundreds of thousands of operations. Rating: 10 amperes at 110 volts or 5 amperes at 220 volts, either direct or alternating current. Adjustable by indicator for any temperature within a range of 25 degrees. Can be furnished for any 25-degree range from minus 20 to plus 250 degrees F. Operates accurately at any set point. Complete data furnished on request, giving full details covering conditions of use.

	For Heating	For Refrigeration
Price, Single Circuit, Single-Pole	\$36.00	
Price, 2-Circuit, Single-Pole	42.00	
Price, Single Circuit, Double-Pole	46.00	50.00

Arco Snap-acting Gas Valves

This valve prevents back-fire. The movement of the stem is instantaneous. It is snapped open or snapped closed at the instant the elever reaches the end of its travel. Requires minimum of power to operate it.

An entirely new principle of spring and toggle construction is employed which maintains full spring pressure on the seat—keep-



Showing Housing Removed

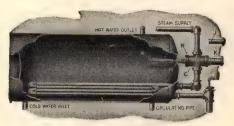
on the seat—keeping the valve closed tight—till the instant it snaps open. This prevents leakage of gas to the burner during the few moments before the opening movement takes place, which frequently causes back-firing in mixer. The valve is either wide open or tight closed, partial opening is impossible.

It can be used with the No.905 Arco Steam Regulator, No. 800 Arco Water Regulator, Honeywell Temperature Regulator or with similar thermostats.

Ball weight furnished with each valve. Frame can be loosened and swung at an angle to run of pipe if necessary.

Size Inches	Length End to End Inches	Height Inches	Weight Pounds	Price Each
3/4	4 ⁵ / ₈ 5 ³ / ₈	6 ½6 6 5 16	$\frac{41}{2}$	\$14.00 16.00
11/4	5156	75/6	7	18.00
$\frac{11/_{2}}{2}$	65/8 7 ¹³ /6	81/2	91/2	20.00 24.00

Arco Tank Regulators



Direct Connected Type

For automatic regulation of the temperature of water or other liquids heated by steam. For steam pressure up to 15 pounds.

For use in hotels, schools, office buildings, hospitals, apart-

ment buildings, factories, public institutions. This regulator has been designed under an entirely new principle of volatile gas expansion. This new principle allows the use of a single seated valve, which eliminates the leak through the valve so common with double seated valves. It also allows the regulator to be placed in any position. It is sensitive, accurate and positive in operation. The valve has no stuffing box and cannot leak steam around the stem. It will not bind in operation, hence insures close regulation.

The Arco Tank Regulator is small and compact. No moving parts are exposed, but are encased in a cast iron housing, finished in baked enamel. Interior parts are of brass with renewable seat and disc of phosphor bronze—the best metal obtainable for valve seats. The bellows used in this construction is made from one piece of brass—not from built-up discs.



Flexible Tube Type

Both the flexible tube type and the direct connected type operate on the same principle. Operating power is developed by the expansion of gas. Gas is readily responsive to temperature changes, hence quick operation and close regulation. An increase in temperature of the water surrounding the bulb A increases the internal gas pressure in the bellows chamber which forces up the head of the bellows and the valve stem, closing the valve. A slight cooling of the water causes a lessening of the gas pressure which allows the compression spring to open the valve. Adjustment for temperature is made by means of a key, turning to right for higher temperature and to the left for lower temperature. This feature prevents meddlers from tampering with the adjustment.

Temperature range regularly furnished 140° to 180° F. Special temperature range supplied on special order. Both types for use on steam pressure up to 15 pounds.

Sizes No. 825 A and B are furnished in the direct connected type. Sizes No. 826 A, B, C and D are supplied in the flexible tube type.

All sizes have iron body—brass interiors with bronze disc and seat. Sizes A and B have unions, both ends. Sizes C and D have screwed ends. Flexible tube sizes C and D are regularly furnished 8 feet long. Regulators with longer tubes can be supplied on special order.

Furnished complete with adjusting key and bushings. Full

1	directions i	for installation with	each regulator	0
		For Pipe	Shipping Weight	Price
	No.	Inches	Pounds	Each
	825A	$\frac{1}{2}, \frac{3}{4}, 1$	20	\$50.00
	825B	$1\frac{1}{4}, 1\frac{1}{2}$	25	60.00
	826A	1/2, 3/4, 1	20	60.00
	826B	11/4. 11/6	25	70.00
	826C	2	50	80.00
	826D	21/2, 3	60	
	OFOL	472, 0	00	90.00

No. 800 Arco Water Regulators



A damper regulator designed for hot water boilers which will control the drafts so as to maintain a constant water temperature at any degree between 100 and 220 degrees Fahrenheit.

The Arco Water Regulator is made entirely of metal. Within the bulb is an expansible metallic bellows, sur-rounding which is volatile liquid. As

the water temperature in the system increases, the liquid vaporizes and the gas pressure generated thereby compresses the bellows and forces upward the thrust rod or stem which tilts the level and closes the drafts. As the water cools the gas pressure is relieved and the counterweight opens the drafts. There are no perishable parts to wear out. The action is sensitive and accurate. Adjustment for temperature is obtained by changing the position of weights on the cover.

Connections, 2-inch iron pipe thread. Price, No. 800each \$18.00

No. 801 Arco Junior Water Regulators

This regulator is designed especially for hot water supply boilers. the dampers are small and light, less power is required to operate them. The construction and operation are similar to that of the No. 800 Arco Water Regulator.

The Arco Junior Water Regulator prevents boil-ing, sputtering steaming water at the faucets and insures plenty of hot water

as long as there is sufficient fire in the heater. Connection, 11/2-inch standard pipe thread. Temperature range, 130 to 180 degrees Fahrenheit.

No. 905 Arco Steam Regulators



An all-metal pres-sure regulator f o r controlling dampers on steam-heating boilers. It is sensitive and accurate. The diaphragm is a metal-lic bellows. The regu-lator contains no rubber or other perishable material, thus saving the annoyance and expense of renewals so common with regulators using

a rubber diaphragm. The design is such that the steam pressure is on the outside of the bellows, with the stem or thrust rod extending down within the bellows where it is attached to the head at the bottom. These two prime features insure that the bellows expands or contracts evenly in all folds. There is no tendency for the bellows to tilt, and thus unduly stretch the metal on one side. The head is formed as an integral part of the bellows, thereby eliminating possibilities of leak at a soldered joint.

For pressures up to 15 pounds. Connection, 1-inch male thread.

Price, No. 905.....each \$15.00

Type F-2-inch Metaphram Damper Regulators



The meta-phram discs in this regulator are separable, contained in a light brass cage. Lifted from well as a unit for replacements. Metaphramsact

directly on the damper lever. Equipped with 40-inch lever, weights, 12 feet of No. 0 plumbers' chain and 2 ceiling pulleys. Height over all, 8½ inches. Hub threaded 2-inch standard pipe. Price, Type F-2-inch.....each \$18.00

Type A 4-inch Metaphram Damper Regulators



For any medium size house heating boiler. The Type A-4-inch has a larger number of diaphragms than the Jr., increasing the lift Mary have a diaphragms. increasing the lift. May be used on any low pressure boiler operating under 15 pounds.

Equipped with a 40-inch lever, an adjustable weight, two ceiling pulleys and 12 feet of No. 0 plumber's chain. ½-inch

male pipe connection. Price, A-4-inch.....each \$15.00

Type C-7-inch Metaphram Damper Regulators



For medium and large size house heating boilers where lift and power are required. The patented universal adjust-ment feature gives variation of lift and power within the limits of the apparatus and makes this size applicable for pressure or vapor through a change in the fulcrum position and a shifting of weights and lever. Equipped with 48-inch lever, adjustable weights, universal adjustment, two ceiling pulleys, 12 feet of No. 0 plumbers' chain and 1-inch female

pipe connection.
Price, Type C-7-inch.....each \$20.00

Type D-10-inch Metaphram Damper Regulators



For use on large size heating boilers operating on the pressure, vapor or vacuum system. Having 10-inch discs it is extremely sensitive to slight changes of pressure or vacuum. It has the added advantage of self-collapsing discs making it ideal for vacuum systems. Equipped with 48-inch lever, weights, two bell cranks, 12 feet of No. 0 plumbers' chain, and 1-inch female pipe connection.

Price, Type D-10-inch.....each \$27.00

Hot Water Thermometers

Dial Type For Hot Water Heating Boilers and Hot Water Supply Boilers





No. 551, Angle

No. 550, Straight

In shape, appearance and method of indicating temperature, this ther-mometer follows closely the precision instruments so widely used for industrial and laboratory work.

Temperature is indicated by the movement of a hand across a Fahrenheit scale. The bold black marking and black hand stand out clearly on the white face, making the temperature easily readable in boiler rooms or basements where frequently the light is poor. The design is pleasing and more in keeping with equipment than mercury or spirit thermometers. The case is black baked-on enamel, hard rubber finish.

Accuracy and quick responsiveness to temperature changes are special features of this thermometer. Its construction is rugged and eliminates the expense and annoyance of broken tubes.

Width of case, 31/2 inches. Threaded connection, 1/2-inch I. P. S. Can be supplied with dealer's name on dial.

Price, No.	550.	Straighteach	\$5.00
4 4	551,	Straighteach Angle	6.00



Marsh Improved Hot Water **Thermometers**

White enamel scale with permanent black markings. Case pressed steel, baked white enamel finish. Furnished Red Spirit tube or Mercury tube. Temperature scale graduated 40 to 260 degrees by five de-

Scales 6 inches high. Height over all: straight, 10 inches; angle, 7½ inches. Standard pipe connections, ½-inch male pipe thread. Packed in individual cartons. Weight



Straight

Marsh Ther-Alti-Meters

Angle



A combined altitude gauge and hot water thermometer. Tube is filled with red spirit, clear, distinct and with mercury bath. Dial especially grooved to receive tube and prevent breakage; a non-glare, pure white dial; altitude in dead black, temperature, bright red. Dust and moisture proof case, non-breakable, cold rolled stamped steel. Ring fitted with lock and unlock thumb screws; bourdon tube is non-corrosive with interior movement selected and seasoned for hot water work. Hexagon

shank for wrench, half-inch male pipe thread. Graduated 0 to 70 feet altitude and 40 to 260 degrees Fahrenheit. Permanent white enameled finish, baked.

Price, 3½-inch, Weight, 1½ Pounds. ...each \$10.00 # 4½ # 12.00 # 12.00

Round Galvanized Expansion Tanks



Made of steel, heavily galvanized with highest grade zinc spelter both inside and out. Thoroughly tested before leaving factory.

The water supply opening in the side is riveted in place of welding so it cannot be turned or broken out.

Spuds used are of drop forged steel and machined with a good clean thread.

Openings for gauge glass fittings are 1/2 inch and are 131/2 inches from center to center. Can be differently spaced on special order.

Furnished without fittings.

Approx. Capacity Gallons	Size Inches	Square Feet of Radiation	Price Each witbout Trimmings
10	12x20	300	\$8.00
15	12x30	500	9.00
20	14x30	700	12.50
26	16x30	950	14.00
32	16x36	1300	15.00
42	16x48	2000	16.50

No. 497 Expansion Tank Brackets



Takes in all sizes of tanks from 10 to 16 inches diameter. Labor-saving—can be erected in two minutes. A substitute for the old-fashioned shelf and at less expense. Weighs about 6½ pounds and is shipped with screws packed under the slide pieces.

Price, No. 497.....each \$1.75

Excelso Fire Pot Generators



Fits any type of hot water boiler or hot air furnace and is so designed as to be entirely above the fire.

Made in either cast iron, galvanized iron or brass in 2 sizes: Size No. 1, up to 40 gallons capacity; size No. 2, from 40 to 60 gallons capacity.

No	1	2
Price, Cast Ironeach	\$8.00	\$12.00
# Brass	18.00	27.00

Radiator Screw Nipples



No. 5 With Right and Left Threads

Heavy malleable radiator screw nipples with right and left threads.

Size.....in. 1½ 1¾ 2 Price....each \$.15 .20 .20

R. & L. Hexagon Nipples

Price,	1½-inch	Size.			,	.each	\$.50
46	2 "	" .				. "	.70

Also adapted for vento radiation.



Radiator Push Nipples

No. 4

These nipples can be furnished in all sizes for all types of radiators.

Price each \$.30

Radiator Bushings



Size	Price	Size	Price
Inches	Each	Inches	Each
1 x 3/4	\$.09	11/2×11/4	\$.14
11/4×1	.11	2 x 3/4	.21
11/2X 1/2	.14	2 x1	.21
11/2x 3/4	.14	2 x11/4	.21
11/2×1	.14	2 x1½	.21

Eccentric Bushings

		No	. 35
Size	Price	Size	Price
Inches	Each	Inches	Each
$1\frac{1}{2}$ $x\frac{1}{2}$	\$.25	2x 3/4	\$.27
11/2×3/4	.25	2x1	.27
2 x1/2	.27		

Sizes 1½x½ and 1½x¾ also furnished with left hand threads.

Radiator Plugs

Size Inches 3/4	Price Each \$.06	Sise Inches 11/2 2	Price Each \$.14	
1-/4	.10	* * *		

Radiator Pedestals



Plate Y-235

Radiator pedestals are made in the following heights: $\frac{1}{2}$, $\frac{1}{2}$, $\frac{2}{2}$, $\frac{2}{2}$, $\frac{3}{2}$, $\frac{3}{2}$, $\frac{4}{2}$, $\frac{4}{2}$ and 5 inches.

Cast Iron Adjustable Radiator Feet



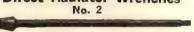
No.	Height Closed In.	Height Open In.	Price Each
1	7/8	11/4	\$.20
2	11/4	13/4	.25
3	13/8	$2\frac{1}{4}$.30

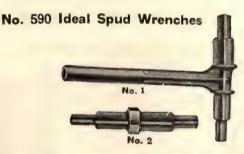
Indirect Radiator Wrenches



Made especially for assembling wall and indirect radiators. Size of Nipple ... inches $1\frac{1}{2}$ 2 Price ... each \$4.00 5.25

Direct Radiator Wrenches





Convenient for connecting up union radiator valves or union elbows. Style 1 is used hand-to and has an open hexagon on end of handle for adjusting bolt nut. Style 2 is used with a Stillson wrench. Either style, 3/4, 1, 11/4 and 11/2-inch sizes. Made of malleable iron.

Radiator Bronze Powder



Size of Canpour	nd ½ 1
Price of Gold Bronzeper ca	in \$2.90
" " Copper " "	2.90
" " Aluminum Bronze "	\$1 40 2 50

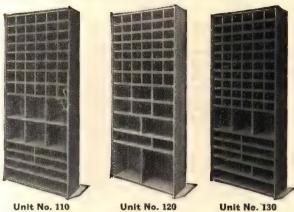
Other colors in one-pound cans.

Radiator Bronzing Liquid

Size of Can...gallon 1/2 1
Price...per can \$1.80 3.40



Lupton Unit Shelving



Lupton Unit Shelving is suited to the miscellaneous uses of secondary storage. It is lighter than the heavy types of storage shelving yet it is exceptionally strong. Metal goods, hardware, metal patterns, motor accessories, etc., as well as lighter articles, can be stored in the Lupton Unit Shelving with a maximum of convenience. The unit is used in manual training schools for holding tools, hardware, materials and samples of finished work: in stores and offices it makes for neatness and efficiency. It is also useful in factories, mills, etc., for holding samples of metal goods, as well as small stocks for immediate use. Unit No. 150 is suitable for stationery and office supplies. Unit No. 160 is especially intended for small bolts and other hardware.



Unit No. 150 will carry 100 pounds per shelf, evenly distributed. Unit No. 230 has steel reinforcing member and will carry a distributed load of 300 pounds per shelf. The other units will carry any quantity of ordinary metal articles that can be put in the bins.

To move Lupton Unit Shelving to a new location it is only necessary to tip each unit back on a hand truck. It is not necessary to empty shelves completely or to take them apart and re-erect as with ordinary steel shelving.

All shelves and bins have label holders. Shelves and bin dividers can be adjusted by moving a few bolts. Additional shelves can be furnished.

Shelving is finished in velvet-green baked enamel.

Units are completely assembled at the factory and shipped crated ready for immediate use.

Dimensions: Width, 3 feet; height, 7 feet; depth, 1 foot.

	Dimensions	Weight	Price
No.	Feet	Lbs.	Each
110	3x7x1	210	\$45.60
120	3x7x1	190	41 60
130	3x7x1	220	51.00
140	3x7x1	175	34.80
150	3x7x1	150	26.60
230	3x7x1	160	32.20
160	3x7x1	250	57.70

Lupton Bin Type Storage Shelving



Intended for stock rooms, warehouses, etc., where heavy loads are required. Usual shelf depths are 12, 18 and 24 inches, with uprights three feet apart carrying a distributed load of 1000 pounds on the shelf, or 7000 pounds per unit.

Bin type is furnished with solid back and solid uprights.

Single Face Units

			SING		SECO:	ND	FOR EAG	CH SHELF
		No. of	Unit		or F	OL-	ADD	ED OR
***		Inter-	FIRST OF		LOWING	Units	Омз	TTED
Ht.		mediate		Price	Wt.	Price	Wt.	Price
Ft.	In.	Shelves	Lbs.	Each	Lbs.	Each	Lbs.	Each
8	12	7	184	\$28.90	159	\$25.00	10	\$1.60
10	12	9	222	35.10	194	30.50	10	1.60
8	18	7	243	37.30	201	31.00	16	2.00
10	18	9	300	46.10	248	38.20	16	2.00
8	24	7	330	50.40	280	42.50	20	3.10
10	24	9	405	62.00	340	52.20	20	3.10

Double-Faced or Back to Back Arrangement

When sections are placed in center of the room in doublefaced or back-to-back arrangement the back of the first unit may be used for two sections. Any two sections of the same height may be placed back-to-back in this way.

In ordering, specify number of backs to be omitted and deduct price of one back for each pair of units to be so placed. Price, Back, for Unit 8 Feet High....each \$6.60 Price, Back, for Unit 12 Feet High....each 8.20

Bin Dividers

Size In.	Ship. Wt., Lbs.	Price Each	Size In.	Ship. Wt., Lbs.	Price Each	Size In.	Ship. Wt., Lbs.	Price Each
6x12	.9	\$.22	6x18	1.2	\$.26	9x24	,	\$.42
9x12	1.2	.26	9x18	1.7	.34	12x24	3.0	. 52
12×12	1.6	.32	12x18	2.2	.40	18x24	5.2	1.00
			18x18	4.0	. 80			

Bin Fronts

 $36x1\frac{1}{2}$ 2.0 \$.50 36x3 3.1 \$.64 36x6 4.5 \$.82

Label Holders

Price, 1x31 In. for 1/6-In. Card, Wt. .36 Lbs....each \$.15 Price, 2x31 In. for 1/6-In. Card, Wt. .62 Lbs....each .20



Lupton Steel Utility Cabinets

For stationary and miscellaneous storage.

Can be used as a storage cabinet, a bookcase, a wardrobe or a locker. The shelves are adjustable and may be purchased as required.

The door has a 3-point latch with cylinder lock.

Width, 36 inches; height, 75 inches; front to back, 18 inches.

Shipping weight with shelves, 225 pounds.

Price, Complete... \$48.00

Lupton Rack Type Storage Shelving

For stock rooms, warehouses, etc.

Usual shelf depths, 18 and 24 inches with uprights three feet apart.

Rack type is open. Units, 3 feet wide, 8 feet high, 24 inches deep. Top, bottom and 3 intermediate shelves per unit.



Loads Up to 1000 Pounds per Shelf

	Lo	ads Up 1	to 1000 F	ounds	per Sh	elf	
	UNIT OR	SECON	or For-			DIAGO	
Wt.	Price	Wt.	G UNITS Price	Wt.	OMITTED Price	BRACES PE	Price
Lbs. 173	Each \$27.80	Lbs. 135	Each \$21.20	Lbs.	Each	Lbs.	Each
110		ds 1000	to 1200	Poun	\$2.90	4 Sholf	\$.70
195	\$31.80	155	\$25.20	24	\$3.70	4	\$.70
D .	4 04 7		Label H	olders			•
Price,	1x31 In 2x31 "	for 7/8-	in. Card	Wt	4 Lb	each	\$.10
	4X31 "	1/8		" , (5 " · · · ·	"	. 15



No. 710 Lupton Steel Shelving Units

For pipe fittings.

This is a steel unit ready to use, for the systematic storage of 6500 fittings.

Iron pipe sizes % to 1 inch. Contains 123 individually indexed compartments.

Size, 3 feet wide, 7 feet high, 12 inches front to back.

Finish is velvet-green baked enamel.

Shipping weight, 245 pounds.

Price, No. 710.....each \$54.00

No. 720 Lupton Steel Shelving Units

For small tools.

Contains 60 compartments 3 inches wide (48 of them sloping) and 6 drawers, 4½x6x12 inches.

Total,148 compartments each separately indexed.

Size, 3 feet wide, 7 feet high, 12 inches front to back.

Finish is velvet-green baked enamel.

Shipping weight, 240 pounds.



Price, No. 720.....each \$48.00 Lupton Steel Bench Drawers

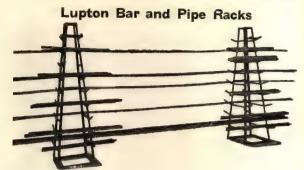


A cylinder lock enables foreman to have a safe storage for blue prints, etc. Made of angle iron and sheet steel.

Price, 18-inch...each \$4.50

" 24 " ... " 5.50

" Tray, Extra. " .40



No. 499 Lupton Factory Desks

Ruggedly made for hard wear but smoothly finished. Full width drawer with cylinder lock. Top is reinforced and hood contains pen holder on each side. Widely used by foremen, timekeepers, shipping clerks, etc.

Finish, high grade baked green enamel.

Width, 36 inches. Height: 43½ inches at front; 52 inches at back. Depth, 28 inches.

Shipping weight, 150 pounds.

Price, No. 499 each \$38.40

Lupton Steel Counter Cabinets



Each drawer is 12x12x21/4 inches and contains 12 compartments, 4x3 inches.

Convenient for small bolts, nuts, washers, etc.

Makes a neat appearance on the counter.

Shipping weight, No. 530, 19 pounds; No. 531, 35 pounds.

No. 520 Lupton Bench Legs

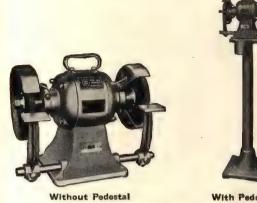


Made from pressed steel with all parts die-formed and welded together. Top and feet are broadly flared, providing stability without cross-bracing. A strong construction for heavy duty.

Height, 31 inches without top. From front to back, 23½ inches. Extension increases depth 5 inches. Shipping weight, 25 pounds. Shipping weight of extension, 2 pounds.

Price, No.	520		 	 eac	h \$4.70
Price, No.	526, Ext	ension	 	 ····eac	h .40

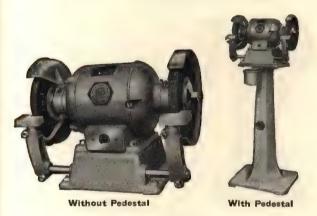
Black & Decker 6-Inch Electric Grinders



An ideal bench grinder for sharpening edge tools and genwheel. This is not a universal motor; specify whether required for A.C. or D.C. Complete as illustrated with 2 grinding wheels, 1 coarse and 1 fine; 2 wheel guards, 2 tool rests, electric cable fitted with attachment plug and electric switch.

Diameter of Wheelsinches	6
Face of Wheeks	1/2
No Load Speed, 60-cycle and D.Cr.p.m.	3600
Weight, Netpounds	38
Price, for 110 Volts, 60-cycle, A.C each	\$46.00
" " 110 " 25, 40 or 50-cycle, A.C "	50.00
" " 220 " 60-cycle, A.C "	50.00
" " 110, 220 or 32 Volts, D.C "	50.00
" Pedestal, Extra"	12.00
" Extra for Threaded Taper Buffing Wheel Ex-	
tensioneach	3.50

Black & Decker 8-Inch Electric Grinders



Not a universal motor. Specify whether required for d.c. or a.c., and if for a.c. specify whether 25, 40, 50 or 60-cycle.

Bench grinder complete as illustrated with two 8-inch grinding wheels, 1 coarse and 1 fine; 2 wheel guards, 2 adjustable tool rests and switch in base.

able tool lests and switch in base.	
Diameter of Wheelsinches	8
Face of Wheelsinches	3/4
No Load Speed, 60-Cycler.p.m.	3600
No Load Speed, D.Cr.p.m.	3000
Weight, Netpounds	75
Price, for 110 Volts, 60-Cycle, A.C., each	\$96.00
" " 110 " 25, 40 or 50-Cycle, A.C "	100.00
" " 220 " 60-Cycle, A.C "	100.00
" 110 or 220 Volts, D.C "	100.00
" Pedestal, Extra"	18.00
" Extra for Threaded Taper Buffing Wheel Ex-	
tensioneach	5.00

Black & Decker 6-Inch Twist Drill Grinders



This equipment will quickly and accurately grind straight shank and taper shank twist drills up to 5/8-inch diameters.

A micrometer screw feed is provided to advance the twist drill against the cup grinding wheel.

No adjustment is necessary for grinding different diameter twist drills.

Complete as illustrated, with one general purpose grinding wheel, one cup wheel, one tool rest, two wheel guards, electric switch in base and electric cable fitted with attachment

Price	, for	110	Volts,	60-Cycle, A.Ceach	\$66.00
66	" 44	110	"	25, 40 or 50-Cycle, A.C	70.00
44	44	220	44	25, 40 or 50-Cycle, A.C	70.00
66	44	110.	220 o	32 Volts, D.C "	70.00
44	Pe	dest	al with	Water Pot	12.00

Black & Decker Electric Valve Grinders

With the Pistol Grip and Trigger Switch



Manufactured in two sizes. The No. 1 is used generally in garages, service stations and in production plants. The No. 2, which is a larger, more powerful and faster machine, is designed for use on exceptionally large heavy valves and for production work.

Operates on alternating or direct current.

Rugged in construction, is air cooled and can be operated continuously without overheating.

The spindle oscillates back and forth with a long steady sweep similar to the motion used in grinding by hand, but much faster.

The Black & Decker Electric Valve Grinder is complete with 71/2 feet of duplex electric cable, separable attachment plug, detachable bits, box of grinding compound and lift spring.

Weight, No. 1, 6 pounds. Weight, No. 2, 10 pounds.

Price.	No.	1.	for	110 Voltseach 220, 250 or 32 Volts	\$34.00
4	46	1	66	220, 250 or 32 Volts "	38.00
"	44	2	44	110 Volts	64.00
66	66	2	66	220, 250 or 32 Volts "	68.00

Blank bits which can be filed to fit special valves are furnished for 60 cents per half dozen.

Black & Decker Twist Drill Grinding **Attachments**



By means of this equipment straight shank and taper drills up to 5%-inch may be quickly and accurately ground.

This equipment has been designed for tool room and machine shop use.

Equipped with micrometer screw feed. No adjustment is necessary for grinding different diameter twist drills.

Price, attachments for 6-inch Bench Grinder . . . each \$24.00

Black & Decker Portable Electric Grinders

Wi'h the Pistol Grip and Trigger Switch



Sharpens tools; smooths castings and forging ridges and rough spots; smooths welds and shapes fittings.

With the wire-brush wheel, it roughens tires, removes sand from castings and removes rust and paint from metal surfaces.

With the rag buffing wheel, it can be used for all sorts of polishing work.

Furnished complete with 15 feet of duplex electric cable with attachment plug, grinding wheel and wheel guard except 4-inch grinder which is supplied without wheel guard.

Operates on a.c. and d.c. and on voltages 10 per cent over or under those specified.

Size Grinderinches	4	5	c
Horse Power	1/6		1/4
Diameter of Grinding Wheelinches	1/6 4	1/4 5	$\overset{1}{\overset{2}{6}}$
Face of Grinding Wheel "	5/6		1
Diameter of Hole of Wheel "	5/8 1/2	8/4 1/2	5/8
No Load Speedr.p.m	4800	3800	3300
Over All Length inches	17	22	231/4
Greatest Diameter"	4	5	: 6
Extension Gear Case to Center of	_	0	0
Wheelinches	73/4	81/4	9
Net Weight nounds	10	1512	241/2
Price, for 100 Voltseach	\$60.00	\$80.00	\$90 00
Price, for 100 Voltseach " 220, 250 or 32 Volts. "	64.00	84.00	94.00

Black & Decker Grinding Outfits



This grinding outfit consists of a stand for holding the electric drill, grinding wheel arbor and 3-inch grinding wheel with ½-inch face. Ideal for sharpening drill bits, chisels, screwdrivers, or any kind of light grinding, whether on the bench or portable.

Price, No. F-315, for ¼-Inch Drill....each
"F-316" Heavy Duty ¼-Inch Drill. "

Stands Only

The ¼-inch Black & Decker Drill can quickly and easily be put in this stand and held rigid by a clamping screw.

Price, No. F-176, ¼-Inch Drill Stand ... each \$1.25

"F-310, Heavy Duty ¼-Inch Drill Stand "2.00

Black & Decker 10-Inch Grinders

With Plain Universal Guards



An exceptionally husky 10-inch grinder. provided with adjustable tool rest, snap switch and water pot, but price does not include grinding wheels.

Can be supplied in bench type or as complete pedestal grinder.

The A.C. 60-cycle motor embodies the Marschke removable stator core.

Must be operated from power circuit.

This is a 1-horsepower, totally enclosed, ball-bearing machine with cast iron guards and enclosing covers. Malleable iron wheel guards and enclosing covers can be supplied at extra cost.

Tool rests mounted on wheel guards are adjustable to the wear of the wheel by means of hand screws and lock. This

has a sliding adjustment at an angle which insures the front top of wheel guard maintaining the same distance from wheel as the tool rest, thereby providing automatic spark protection. These guards are of the Universal type and the opening can be brought to any position by means of a lever, no tools being required. This enables the operator to grind at any position on wheel circumference.

220, 440 or 550 Volts, 2 or 3-Phase, 60-Cycle A.C.

Bench Type

H.P.	WHEELS, IN.	Speed	SPINDL	E, In.	Base	Ht.	Wt.	Price
	Diam. Face	R.P.M.	Diam.	Lgth.	In.	In.	Lbs.	Each
1	10 x 11/4	1800	7/8	24	11x12	$9\frac{1}{2}$	225	\$125.00

Pedestal Type 1 10 x 11/4 1800 1/2 24 18x18 375 \$150.00

Black & Decker 12 and 14-Inch Grinders With Exhaust Type Universal Guards



Provided with adjustable tool rests, either round removable or stationary water pot, as desired, and push button motor control. Can be supplied with foot control,

if specified, without extra charge.
Price does not include grinding wheels.

Supplied as complete pedestal

grinder only.

The A. C. 60-cycle motor embodies the patented Marschke removable stator core.

This is a 3-horsepower, totally enclosed, ball-bearing machine with wheel guards of electric steel with cast iron enclosing covers.

front rib on side of guards can be removed without injury to guards if more side space is required. No extra charge for this if specified with order for machine.

Tool rests mounted on wheel guards and guards adjustable to the wear of the wheel by means of hand screws and lock. This has a sliding adjustment at an angle which insures the front top of wheel guard maintaining the same distance from wheel as the tool rest, thereby providing automatic spark protection. These guards are of the Universal type and the opening can be brought to any position by means of a lever, no tools being required. This enables the operator to grind at any position on wheel circumference.

220, 440 or 550 Volts, 2 or 3-Phase, 60-Cycle A.C.
WHEELS, IN. Speed SPINDLE, IN. Base Ht. Wt. Price
H.P. Diam. Face R.P.M. Diam. Leth. In. Line Each

-	4.4.	Diani. Pace	Tr. I . IvI.	Diam.	rigen.	AH.	III.	Libs.	Each
5	3	12×2	1800	11/4	2934	23x20	39	650	\$275.00
5	3	14×3	1800	11/4	$\frac{29\frac{3}{4}}{32\frac{3}{4}}$	23x20	39		300.00
			11	10 or	220 Vo	Its, D.	C.		
8	1	12×2	1800	11/4	$32\frac{1}{2}$	23x20	39	600	\$325.00

3 14 x 3 1800 11/4 39 23x2039 750 350.00

Black & Decker 12, 14 and 18-Inch Wide Type Grinders With Exhaust Type Universal Guards

These are 4-bearing machines, provided with adjustable tool rests, either round removable or large stationary water pot, as desired, and push-button motor control, but can be supplied with foot control for the 3-horsepower sizes if specified, without extra charge.

Prices do not include grinding wheels.

Supplied as complete pedestal grinder only.

The A. C. 60-cycle motor embodies the patented Marschke removable stator core.

These are totally enclosed, ball bearing machines with wheel guards of electric steel with cast iron hinged enclosing covers. Front rib on side of guards can be removed, if side space is required, without extra charge, if specified with order.

Tool rests mounted on wheel guards and guards are adjustable to the wear of the wheel by means of hand screws and lock. This has a sliding adjustment at an angle which insures the front top of wheel guard maintaining the same distance from wheel as the tool rest, thereby providing automatic spark protection.

2	20, 440	or 550	Volts	, 2 or	3-Pha	ase, 60	-Cycle	A.C.
TTT	WHEELS, IN.	Speed	SPIND	m, In.	Base	Height		Price
	Diam, Face	R.P.M.	Diam.	Length	ln.	In.	Lbs.	Each
3	12×2	1800	11/4	48	23x20	39	725	\$350.00
3	14×3	1800	11/4	51	23x20	39	725	400.00
5	14×3	1800	11/2	56	29x32	34	1350	475.00
5	18×3	1200	11/2	56	29x32	34	1500	525.00
		11	0 or	220 V	olts, D	. C.		
3	12×2	1800	11/4	49	23x20	39	725	\$400.00
5	14 x 3	1200	$1\frac{1}{2}$		39x32	34	1350	550.00

Black & Decker 18, 20 and 24-Inch **Heavy Duty Grinders**

With Exhaust Type Universal Guards



A 4-bearing machine provided with adjustable tool rests and push-button motor control.

Prices do not include grinding wheels.

The A. C. 60-cycle motor embodies the patented Marschke removable stator

This is a totally enclosed, ball-bearing machine with extra heavy wheel guards of electric steel and cast iron

hinged enclosing covers. The front rib on the wheel guards can be removed without injury to guards if more side space is

desired. No extra charge for this if specified with order.

Spindles have square threads. Tool rests are mounted on wheel guards and the guards are adjustable to the wear of the wheel by means of hand screws and lock. This has a sliding adjustment at an angle which insures the front top of wheel guard maintaining the same distance from wheel as the tool rest, thereby providing automatic spark protection. These guards are of the Universal type and the opening can be brought to any position by means of a lever, no tools being required. This enables the operator to grind at any position on wheel circumference.

Water pots, which fasten to side of base, can be supplied at extra cost.

220, 440 or 550 Volts, 2 or 3-Phase, 60-Cycle A.C.

	WHEELS, IN.	. Speed	SPINDI	E, IN.	Base	Ht.	Wt.	Price
H.P.	Diam. Face	R.P.M.	Diam.	Lgth.	In.	In.	Lbs.	Each
5	18x3	1200	11/2	48	29x32	34	1500	\$500.00
71/2	20x4	1200	2	50	29x32	34	1600	600.00
10	24x4	900	2	561/4	29x32	34	2200	700.00

Black & Decker 18, 20, 24 and 30-Inch **Heavy Duty Grinders**

With Exhaust Type Adjustable Guards and Automatic Spark Shield



Four-bearing machines totally enclosed.

These grinders up to and including 10 horsepower, have automatic cross-the-line push-button starters with overload and under voltage protection for starting and stopping. Machines above 10 horsepower have manual starters, unless automatic starters are specified, for which there will be an extra charge. The cross-the-line starters are mounted on inside of door, being easily accessible for adjustment. Prices do

not include grinding wheels.

The A.C. 60-cycle motors have the patented Marschke removable stator core. Two or 3 speed motors can be furnished

at extra charge.

The out-board bearings are independent from the motor bearings. Over-size ball bearings with end thrust taken up by

double radial and thrust bearing in right side of motor.

Extra heavy wheel guards of electric steel with cast iron hinged enclosing covers. Spindles ground to size and have square threads.

Tool rests mounted on wheel guards, and the guards are adjustable to the wear of the wheel by sliding on table. Guards are guided on table by tongue and groove and locked by means of a hand lever, no wrenches being required.

The patented Marschke spark shield, mounted on upper lip

of guard, is arranged so that it automatically hugs the wheel, being controlled by the adjusting of the guard as the wheel

diameter decreases with wear.

220, 440 or 550 Volts, 2 or 3-Phase, 60-Cycle A.C.

	WHEEL	s, In	7. Speed	SPIND	LE, IN.	Base	Ht.	Wt.	Price
H.P.	Diam.	Face	R.P.M.	Diam.	Lgth.	In.	In.	Lbs.	Each
71/2	18	3	1200	2	54	$45x31\frac{1}{2}$	34	2000	\$650.00
$7\frac{1}{2}$	20	4	1200	2	56	$45x31\frac{1}{2}$	34	2200	700.00
10	20	4	1200	21/4	56	$45x31\frac{1}{2}$	34	2400	750.00
10	24	4	900	$2\frac{1}{4}$	59	$45x31\frac{1}{2}$	34	2700	800.00
15	24	4	900	$2\frac{1}{4}$	59	$45x31\frac{1}{2}$	34	3000	950.00
15	30	4	720	$2\frac{1}{2}$	70	55x35	34	3300	1750.00
20	30	4	720	3	70	55x35	34	3400	2000.00

			11	0 or	220	Volts, D.	C.		
				Col	nstan	t Speed			
$7\frac{1}{2}$ $7\frac{1}{2}$	18	3	1160	2	- 54	45x31½	34	2550	\$750.00
$7^{1/2}$	20	4	1160	2	56	$45x31\frac{1}{2}$	34	2650	800.00
10	20	4	1160	2	56	$45x31\frac{1}{2}$	34	2700	875.00
10	24	4	850	2	62	$45x31\frac{1}{2}$	34	3000	900.00
15	24	4	850	$2\frac{1}{4}$	62	$45x31\frac{1}{2}$	34	3200	1075.00
15	30	4	675	$2\frac{1}{4}$	70	55x35	34	3700	1875.00
20	30	4	675	3	70	55x35	34	4000	2175.00
				Va	riable	e Speed			
71/2	18	3	1700	2	54	45x311/2	34	2550	\$850.00
$7\frac{1}{2}$ $7\frac{1}{2}$	20	4	1700	2	56	$45x31\frac{1}{2}$	34	2650	900.00
10	20	4	1700	2	56	45x31½	34	2700	1000.00
10	24	4	1700	2	62	$45x31\frac{1}{2}$	34	3000	1050.00
15	24	4	1700	21/4	62	$45x31\frac{1}{2}$	34	3200	1250.00
15	30	4	1350	$2\frac{1}{2}$	70	55x35	34	3700	2200.00
20	30	4	1350	3	70	55x35	34	4000	2500.00

For ball-bearing exhaust blower add \$80.00.

Parish Chaser Grinders

The Parish Chaser Grinder is designed to grind chasers from all makes of die heads, mechanical hand pipe stocks, and power pipe threading machines.

Personal instructions given by fact o r y representative.

Price, Parish Chaser Grinder Stand...each \$88.00

Price, Black & Decker, Grindereach 46.00

Price, Stand and Grinder Completeeach 134.00

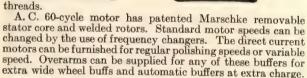


Black & Decker Buffers

Sturdy 4-bearing, totally enclosed machines.

Motor controlled by snap switch on 1-horsepower machines; all other sizes push-button control.

Spindles high carbon steel, with square threads, except on the 1 to 3-horsepower, which have standard



									t charge.
220	, 44	0 or 55	50 Vo	Its, 2	or 3	-Phase,	60-	-Cycle	A.C.
	AA TIGES	ł.						_	
	Width		ed_	SPIND	LE, IN.	Base	Ht.	Wt.	Price
H.P.	In.	R.P.	М.	Diam.	Lgth.	In.	In.	Lbs.	Each
1	2	1800 or	3600	7/8	36	18x18	39	295	\$150.00
3	4	1800 "	3600	11/4	52	23x20			
*5	4						39	600	275.00
	-	1800 "	3600	$1\frac{1}{4}$	$53\frac{1}{2}$	23x20	39	650	350.00
**5	4	1800 "	3600	11/2	62	29x32	39	1200	375.00
71/2	6	1800 "	3600	11/2	62	29x32	39	1300	450.00
10	6	1800 "	3600	Í	64	29x32	39		
	0	1000		*				1400	550.00
			110 c	or 220	Vol:	ts, D.C.			
3	4	1600 to	2400	1	46	23x20	39	650	\$325.00
5	4	1600 "	2400		60				
	100			$1\frac{1}{4}$		23x20	39	750	450.00
71/2	6	1600 "	2400	$1\frac{1}{2}$	66	29x32	39	1350	550.00
10	6	1600 "	2400	11/2	66	29x32	39	1450	675.00
*Ligh	t D	nitsz **	Hoorn	Durt	- 41	1/2 or 13		.1	0.0.00
-1181	, U .L	duy.	rreav	Dut	y. 11	72 or 1%	4 1n	ones.	
Overa	rm o	n 3 and	5-Ho	rsepov	ver Ligh	nt Duty Mach	ines .	each	\$80.00
66	. 6	5-Ho	rsepov	ver H	093737	66	6	44	100.00
		0 1.10	. sopor	TI II	Cary				100.00

Black & Decker Portable Electric Tappers

"With the Pistol Grip and Trigger Switch"



These machines are both complete with 3-jaw geared chuck and 15 feet of duplex electric cable fitted with attachment plug.

Black & Decker Portable Electric Tappers embody all of the well known and proven features of the Black & Decker Portable Electric Drills, including the Pistol Grip and Trigger Switch.

The mechanism is so designed that the tap chuck automatically reverses and backs the tap out of the threaded hole when operator gives a backward pull on the machine. No reversing switch is needed.

	No. 1	No. 2
Capacity in Cast Iron, Tapin.	5/4	3/8
" Steel, Tap"	8/0	12
" Steel, Tap" " Brass or Aluminum, Tap"	5/16 8/16 3/8	1/4
No Load Speedr.p.m.	500	
Net Weightpounds	000	300
Drive for 110 W.14	$6\frac{1}{2}$	83/4
rrice, for 110 volts each	\$58.00	\$78.00
Price, for 110 Volts each " " 220, 250 or 32 Volts "	62.00	82.00
Frice, Special Speed of 500 or 700 R.P.M.		02.00
Supplied ateach	5.00	5.00
Price, 3 Wire Cable Permitting Ground Con-	3.00	3.00
nection E-tree	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
nection, Extraeach	2.50	2.50

No. 1 fits Black & Decker 1/4-inch bench drill stand.

No. 2 fits Black & Decker 56-inch bench drill stand.

Twist Drill Sizes

The following table indicates the correct sizes of twist drills to use for drilling holes for any size of tap within the range of the Nos. 1 or 2 Electric Tapper:

Tap Size In, 1/16 1/16 5/64	No. Th'ds per In. 64 72 60	Size Drill 364 364	Tap Size In. 7/32 7/32 15/64	No. Th'ds per In. 24 32	Drill 16 12 10	Tap Size In. 3/8 7/16	No. Th'ds per In. 27 14 20	Sine Drill R U 25/64
5/64 3/32 3/32	72 48 50	52 49 49	1/4 1/4 1/4	$\frac{20}{24}$ $\frac{27}{27}$	7 4 3	7/16 7/16 1/2	24 27 12	X Y 2764
7/64 1/8 1/8	48 32 40	43 3/82 38	1/4 1/4 5/16	$\frac{28}{32}$ 18	$^{3}_{\frac{7}{32}}$	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	$13 \\ 20 \\ 24$	27/64 29/64 29/64
9/64 5/32 5/32	40 32 36	32 1/8 30	5/16 5/16 5/16	$\frac{20}{24}$ $\frac{27}{27}$	17/64 I J	1/2 9/16 9/16	27 12 18	15/ ₃₂ 31/ ₆₄ 33/ ₆₄
11/64 3/16	$\begin{array}{c} 32 \\ 24 \end{array}$	$\frac{2}{26}$	5/16 3/8	$\begin{array}{c} 32 \\ 16 \end{array}$	9/32 5/16	9/16 5/8	27 11	17/ ₃₂ 17/ ₃₂
3/16 13/64	32 24	$\begin{array}{c} 22 \\ 20 \end{array}$	3/8 3/8	$\begin{array}{c} 20 \\ 24 \end{array}$	$\overset{21}{Q}_{64}$	5/8 5/8	$\begin{array}{c} 12 \\ 18 \end{array}$	35/64 37/64

Black & Decker Portable Electric Drills

With the Pistol Grip and Trigger Switch



The Black & Decker Portable Electric Drill is designed and constructed for drilling metal or wood and is husky and serviceable throughout.

The pistol grip and trigger switch enables the operator to

control the tool like an automatic pistol.

The Black & Deeker Drill is light in weight and well balanced. Cord is easily renewed. Commutator and cover is independent of bearings. Has stub tooth gears of chrome nickel steel heat treated. No gears run on studs. Full ventilation is provided. Cooling air circulates around outside of motor field as well as through gap due to hexagonal body design. All parts are unusually accessible and are interchangeable. Grease lubrication throughout.

The motor is the multipolar type and is unusually powerful. Armature and field are built up of insulated sheet steel laminations of high permeability, series compensated wound, and any of the Black & Decker Drills will operate on direct current or 25, 40, 50 or 60-cycle alternating current, or on any two wires of a 3-phase circuit. They will operate satisfactorily on voltages 10 per cent over or under the circuits for which

they are designed.

Its adaptability makes it particularly serviceable in garages, service stations and office buildings.

Black & Decker 1/4-Inch Standard Ball Bearing Electric Drills

With the Pistol Grip and Trigger Switch

Black & Decker 1/4-Inch Heavy-Duty Portable Electric Drills

With the Pistol Grip and Trigger Switch

Operates on A.C. or D. C. Capacity in steel, 0 to ¼ inch; in wood, 0 to % in wood, 0 to

Black & Decker 5/16-Inch Portable Electric Drills

With the Pistol Grip and Trigger Switch

Operates on a.c. or d.c. Capacity in steel, 0 to 5% inch; no load speed, 1400 r.p.m.; net weight, 7 pounds. Full ventilation. Cooling air circulated around outside of motor field as well as through gap due to hexagonal body design. An extreme



Black & Decker 3/8-inch Portable Electric Drills

With the Pistol Grip and Trigger Switch

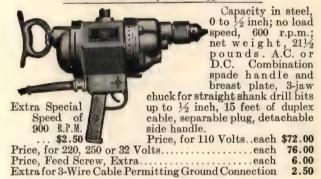
jaw chuck for bits up to ¾ in electric cable tachment plug.

Capacity in steel, b to 3/8 inch; no load speed, 900 r.p.m.; net weight, 14 pounds.

Furnished with combination spade handle and breast plate, three-jaw chuck for straight shank drill bits up to % inch, 15 feet of duplex electric cable and separable at-

Black & Decker 1/2-Inch Heavy Duty Portable Electric Drills

With the Pistol Grip and Trigger Switch



Black & Decker %6-Inch Portable Electric Drills

With the Pistol Grip and Trigger Switch



Capacity in steel, ½ to ½ inch; no load speed; 600 r.p.m. ne t weight, 21 pounds.

Furnished complete with combination spade handle and breast plate.
No. 1 Morse Taper Removable Socket for taper shank drill bits 1/6 to % inch,

15 feet of duplex electric cable, separable attachment plug and detachable side handle. Operates on a.c. or d.c.each \$72.00

Price, for 110 Veltseach	\$72.00
Price, for 220, 250 or 32 Voltseach	76.00
Price, Feed Screw, Extraeach	
Extra for 3-Wire Cable Permitting Ground Connection	2.50

Black & Decker 5/8-Inch Heavy Duty Portable Electric Drills

With the Pistol Grip and Trigger Switch

A.C. or D.C. For maintenance and production work. Capacity in steel, 1/8 to % inch; no load speed. 475 r.p.m.; net weight, 22 pounds. Combination spade handle and breast plate, 3-jaw chuck for straight shank drills up to ½ inch, 15 feet of duplex cable, separable plug,

detachable side handle.	
Price, for 110 Voltseach	\$70 M
" 220, 250 or 32 Volts	82 0
reed Screw, Extra	C 0/
Special Speeds of 600 or 900 R P M Extra	2 5/
Extra for 3-wire Cable Permitting Ground Connection	2.50

Black & Decker 5/8-Inch Special Ball Bearing Portable Electric Drills

With the Pistol Grip and Trigger Switch

Exceptionally light in weight. Designed so that it will satisfactorily use either carbon steel or high speed steel bits for drilling holes from ½ to
½ inch in steel.
Will drill 2-inch
holes in wood. Net weight, 171/2 pounds. Price, for 200 Volts ...each \$68.00 Price, for 220, 250 or 32 Volts.each 72.00 Price, Feed Screw, Extra...ea.
Price, Bench Drill Stand, Extra
Price, Post Drill Stand, Extra
Price, 3-Wire Cable, Permitting Ground Connection, Extra 6.00 28.00 32.00

Black & Decker 1/8-Inch Portable Electric Drills

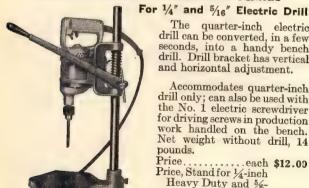
With the Pistol Grip and Trigger Switch

Capacity in steel, 1/6 to 1/8 inch; reaming capacity in steel, % to % inch; no load speed, 350 r.p.m; net wt., 25 lbs. Combination spade

handle and breast plate. No. 2 Morse taper removable socket for taper



Black & Decker Bench Drill Stands

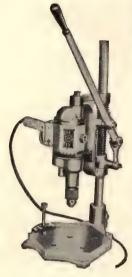


The quarter-inch electric drill can be converted, in a few seconds, into a handy bench drill. Drill bracket has vertical and horizontal adjustment.

Accommodates quarter-inch drill only; can also be used with the No. 1 electric screwdriver for driving screws in production work handled on the bench. Net weight without drill, 14 pounds.

Price. ..each \$12.00 Price, Stand for 1/4-inch

Heavy Duty and 5/6inch Drill and No. 2 Screwdriver...each 14.00 Black & Decker No. 1 Bench **Drill Stands**



The Black & Decker Bench Drill Stand makes a rigid and serviceable drill press out of a portable electric drill in just a few minutes.

Takes \$6, Special ½, Heavy Duty ½, ½, 56 and 7-inch Black & Decker Portable Electric Drills, which can be quickly and easily attached and detached.

Bracket carrying drill can be raised or lowered on vertical column. Drill may be swung clear of base, making it possible to use this bench drilling stand for such work as applying ring gears of automobile axles, drilling in the ends of axle shafts, and other work too high to be drilled on the bench. Adjustment by means of clamping screw.

Shipped complete with adapter block to take Special 1/2-inch type drill. If desired for use with %, Heavy Duty ½, %, % or %-inch drills, the size and type as shown on the nameplate should be specified.

Net weight of stand without drill, 50 pounds.

When the bench drill stand complete with the portable electric drill is desired, this should be specified and the price of the drill added to the price of the stand.

Price.....each \$28.00

Black & Decker No. 1 Post Drill Stands

Designed especially for the purpose of adapting the Black & Decker Electric Drill for use as a drill press for heavy drilling or precision work.

Takes 36, Special ½, Heavy Duty ½, %, 56 and 76-inch drills, which can be quickly attached and detached.

Bracket carrying drill can be raised, lowered or swung around on vertical column to any desired position. Table can also be raised, lowered or swung around on vertical column.

Particularly adapted to shops where bench space is limited, as it can be bolted to a post or the wall.

Net weight of stand without drill, 75 pounds.

Shipped lagscrewed to board, $1\frac{3}{4}$ x5 $\frac{1}{2}$ x52 inches.

Standard brackets hold vertical column of post drill stand 5 inches from the post or wall.

In table are six tapped holes to accommodate 1/2-inch studs. used to clamp work in place. One stud with nut and clamp is supplied with stand.

Shipped complete with adapter block to take Special 1/2-inch type drill. If desired for use with 3/8, Heavy Duty 1/2, 9/4, 5/8 or 1/8-inch drills, the size and type as shown on the nameplate should be specified.

Price.....each \$32.00



Black & Decker Electric Screwdriver and Socket Wrench

"With the Pistol Grip and Trigger Switch"



Has a clutch to prevent breaking screws or bolts by drawing up too tight.

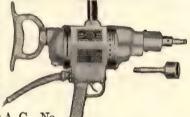
Complete with 15 feet of duplex electric cable with attachment plug and two screwdriver bits. No. 1 is capable of driving a No. 12 wood screw 2 inches long in hardwood; No. 2 of driving a No. 16 wood screw 31/4 inches long in

hardwood. Reversing switch, extra \$10.00. Operates on a.c. or d.c. No load speed 500 r.p.m.

Black & Decker Electric Screwdriver and Socket Wrench

"With the Pistol Grip and Trigger Switch"

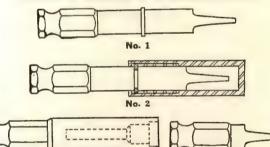
For lag screws and nuts. Complete with 15 feet of duplex electric cable attachment plug, combination spade handle and breast plate, side handle, one hexagon socket wrench with renewable head.



No. 3

Operates on D. C. or A. C. No load speed 500 r.p.m. Reserving switch, extra \$10.00.

Black & Decker Screwdriver Bits



Bits interchange on No. 1 type D, No. 2 type E and No. 3 type B and C Black & Decker Electric Screwdrivers.

Bit Extension

No. 1

Standard bit without centering sleeve. Projects 21/2 inches from chuck. Made in the following sizes: Nos. 4, 6, 8, 10, 12, 14, 16, 18, 20. For driving flat head screws of corresponding numbers. For round head screws use bit one size smaller. Price, No. 1.....each \$1.00

No. 2

Standard bit with centering sleeve. Same sizes as for No. 1. Price, No. 2.....each \$2.00

No. 3
Short bit that projects 1 inch from chuck. To be used where space is limited. Same sizes as for No. 1. Cannot be furnished with centering sleeve. Price, No. 3.....each \$1.00

Screwdriver Bit Extensions

Extensions accommodate standard bits shown in illustration above. Price, 8, 10 or 12-Inch Length.....each \$3.00 14, 16, 20 or 24-Inch Length..... "

Attachments for Black & Decker Portable **Electric Drills**

No. 1 to 2 Morse Taper Sieeves

With this sleeve the Black & Decker 1/8-inch Portable Electric Drill may be used with drill bits having No. 1 Morse Taper Shanks. Price, No. 1 to 2.....each \$1.80

No. 3 to 4 Morse Taper Sleeves

With this sleeve the Black & Decker No. 8 Portable Electric Drill may be used with drill bits having No. 3 Morse Taper Shanks. Price, No. 3 to 4. each \$3.00

No. 1 Morse Taper Arbors with 1/2-inch Chuck

This arbor makes it possible to use the Black & Decker inch Portable Electric Drill with straight shank bits up to 1/2 inch. Price, No. 1.....each \$8.75

No. 2 Morse Taper Arbors with 5/8-inch Chuck

Arbor makes it possible to use the Black & Decker 1/8-inch Portable Electric Drill with straight-shank drill bits up to 5/8 inch. Price, No. 2.....each \$8.75

Feed Screws



Used to obtain feeding pressure greater than obtainable by body pressure, or for obtaining feeding

pressure in restricted places.

Price, To Fit Special ½
inch Heavy Duty ½, 5%, %
and ⅓-inch Drills each
Price, to Fit No. 8 Drillseach 12.00

12 or 24-inch Chuck Extensions

For work that would be otherwise inaccessible, such as the installation of snubbers on automobiles. Can be used with Black & Decker Portable Electric Drills of 1/2 inch and larger sizes. Takes straight shank bits up to ½ inch.

Extension without Chuck.....

Grinding Wheel Arbors



The use of this arbor makes it possible to do light grinding and buffing with the Black & Decker 4-inch Drill, 4-inch Heavy Duty or 5-inch Portable Electric Drill. The arbor is ½ inch in diameter with 4-inch shank, and the grinding wheel, wire wheel or rag buffing wheel is held securely by means of a nut. Price.....each\$1.00

No. 90 Lunkenheimer Regrinding Compound

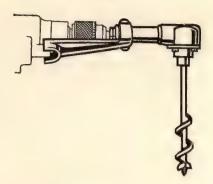
Ready for immediate use, and not only gives assurance of effective abrasive properties, but avoids the time incident to the preparation of a suitable mixture, even if the proper raw materials were available. It is regularly furnished in ¼ and 2-ounce collapsible tubes, which are procurable singly or in cartons containing twelve 2-ounce tubes or one hundred ¼-ounce tubes, and in one, two or five-pound cans.



Price.	1/4-ounce Single Collapsible Tubeseach	\$.35
"	2 " " " " "	. 65
66	Carton Containing 12-2-ounce Tubes "	6.50
66	" 100-1/4 " " … "	30.00
66	1-pound Cans	1.25
66	2 " " " " "	2.25
66	5 4 4	5.00



Black & Decker Right Angle Drilling Attachments



This attachment can be used with electric drills of ½-inch capacity or greater.

This attachment makes it possible to drill holes through floor joists or studding, and to get at places ordinarily inaccessible with an electric drill.

This attachment is fastened in the chuck of the electric drill and an adjustable torque arm is provided to hold the wood boring bit at any desired angle with relation to the electric drill to meet varying conditions.

Equipped with chuck to hold standard bit-stock shank wood boring bits.

Cat. No.	Description	Price Each
5957	Right Angle Drilling Attachment	\$15.00
6222	Equipped with 3-jaw Geared Chuck of 1/2-inch	420
	Capacity	20.00

Syntron Motorless Electric Hammers



The Syntron Electric Hammer is designed for drilling through brick, concrete or masonry; drilling holes for expansion bolts; chipping and cracking stone; driving rivets; light assembly work of all kinds; squaring or breaking up stone and pavements; calking pipes, tanks, plates, etc.; vibrating, and for any purpose where rapid strokes of a hammer can be used.

A self-contained, complete-in-self hammer drill, independent of motors, compressors, air tanks, engines, hose, valves, etc., one man can easily carry and operate it.

valves, etc., one man can easily carry and operate it.

There are three standard types for general use, F, A and B.

Special types, both larger and smaller, are developed to suit special needs for drilling, hammering, or vibrating. Handle is of pistol grip type, with a trigger underneath forefinger to start and stop the hammer.

The tools furnished with these hammers are of the highest quality obtainable. Rugged carrying cases provide compact storage space for hammer, tools and all accessories, as well as a convenient means of carrying the outfit.

a convenient means of carrying the outfit.

Each outfit is furnished complete with two carrying cases,
50-foot extension line with fixtures, rotating wrench and drill
chuck. The hammer, control box, cords and tools can be
furnished individually if desired.

When ordering state voltage and frequency of current, also kind of work to be done

WILLIA OF	MOLY TO DE COHE.			
	Over All	Diameter	Weight	Price
Type	Lgth., In,	Inches	Pounds	Each
F	11	31/6	9	
Ā	13	1/2	17	
		4:	17	
B-4	131/4	5	26	
-	20/4	9	AI U	

Toledo Ratchet Boring Tools



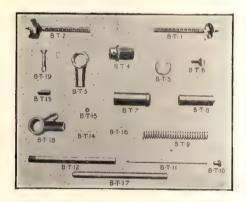
This tool readily bores holes through joists, beams and other wood members of buildings where the parallel or adjoining timbers interfere with the use of the brace and bit, or mallet and chisel.

It enables the operator to run pipe through cleanly bored holes, does its work rapidly and easily, and saves all the strength of weight carrying timbers.

It has been found especially valuable in remodeling jobs where piping has had to be installed in structures already built.

Price,	Borin	g Tool	s, withou	ut :	Bits		 	each	\$15.00
66	$2\frac{1}{2}$ -in	ich Bit	s, Extra				 		6.00
66	2		66						4.50
66	$1\frac{1}{2}$	ec cc	66				 	- 44	3.00
46	1	"	44				 	"	2.20
66	11/4 to	21/2-i	nch Exp	ans	sion	Bits		66	9.00

Repair Parts for Toledo Ratchet Boring Tools



No.	Description	Price Each
	Ratchet Handle, Complete (Not Illustrated).	\$3.00
BT-1	11/4 to 21/2-Inch Expansion Bit	9.00
BT-2	Solid Bits, 2½-Inch Size	6.00
	Solid Bits, 2-Inch Size	4.50
	Solid Bits, 11/2-Inch Size	3.00
	Solid Bits, 1-Inch Size	2.20
BT-4	Chuck	2.50
BT-6	Thumb Screw.	.20
BT 7	Outer Barrel	4.00
BT-8	Inner Barrel	
BT-9	Main Food Spring	4.50
BT-17	Main Feed Spring	.50
	Ratchet Head and Handle, Only	2.00
BT-19	Ratchet Pawl, Complete	1.10

Reed Malleable Iron Pipe Stocks Fitted with Reed Q and E Dies



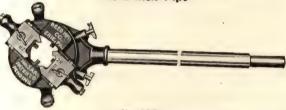
A set consists of stock complete with assortment of dies and guides as listed, each set packed in a water-proofed fibreboard shelf box.

Handles are polished and have rounded ends. Guides are machined inside and outside.

Nominal dimensions of dies: No. OSP1, 2x2x½ inch; Nos. 1SP1 to 1SP5 2½x2½x¾ inch; Nos. 1½SP1 to 1½SP5, 3x3x¾ inch.

			PRICE, EACH	
NY.	Dies	Com-	Extra	Extra
No.	Inches	plete	Dies	Guides
0 SP1	1/8, 1/4, 3/8, 1/2	\$8.00	\$1.40	\$.30
1 SP1	$\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1	10.50	1.60	.40
1 SP2	1/8, 1/4, 3/8, 1/2, 3/4, 1	12.00	1.60	.40
1 SP3	1/8, 1/4, 3/8, 1/2, 3/4	10.50	1.60	.40
1 SP4	$\frac{1}{2}$, $\frac{3}{4}$, 1,	7.50	1.60	.40
1 SP5	$\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1	9.00	1.60	.40
11/2SP1	3/4, 1, 11/4	9.50	2.00	.60
1½SP3	$\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$	15.50	2.00	. 60
1½SP5	1/2, 3/4, 1, 11/4	11.50	2.00	. 60
D.	A D A L A DI OL			

Reed Ratchet Pipe Stocks and Dies 1 to 2-inch Pipe



No. 3AR

A new and improved type of Ratchet Die Stock, which has no lead screw, hence: The action is not restricted to any one thread pitch. There is a wide range of threads, both right and left hand. No time nor effort is wasted in turning up set screws to attach lead screw to pipe, nor in turning stock against the friction of a lead screw.

Has telescopic handle to increase leverage, making easy work of cutting threads on large sizes or on extra hard pipe. Has two pawls, giving a finer ratchet action equivalent

to twice the number of teeth, so there is no lost motion. Full length chasers of dies cut straight, accurate threads and give long service. Fine double threaded throats in dies start easily and positively over any burr without filing. Dies are of a size not easily lost and are held by new and improved clamp screws, which make changing dies the work of but 10 seconds.

Simple in design, substantial in construction, with but few parts, none of which are delicate or complicated or liable to break or get out of adjustment.

Equipped with either solid or adjustable type dies.

With Adjustable Dies

	***	cii Aujustabie	Dies	
	Pipe Dia Regular	s, Inches Extra	PRICE, E	
No.	Set	Dies	Regular Set	Extra Dies
3AR	1 to 2	1/2 to 2	\$30.00	\$4.50
	V	Vith Solid Dies	3	
2SR	1 to 2	1/2 to 2	\$30.00	\$2.50

Reed Bushings or Guides

Every Reed Bushing is turned, faced and bored.

No.	Price Each	No.	Price Each
0SP	\$.30	2SP	\$.75
1SP	.40	3SP	2.00
11/2SP	. 60	4SP	2.00



Nye Three-way Die Stocks



This stock is a one-piece casting con-taining 3 die boxes and 3 bushings. Regularly equipped with No. 1 Nye Dies, ½, 34 and 1 inch. Can also be furnished with smaller size dies when spe-

cified. Size of dies, $2\frac{1}{2}x2\frac{1}{2}x^3$	4 inch.	
crified. Size of dies, 2½x2½x3 Price, Complete with ½, ¾ an " " " " " " " " " " " " " " " " " " "	d 1 Inch Dies each \$15.00	
u u 3/2 1/2 u	3/ " " " 15 00	
" Extra Dies	3.00	

Nye Improved Solid Dies



The Nye patented feature of removing every alternate tooth in the back of the die to reduce friction, and of relieving or backing off each chaser, is used in the Nye Solid Die. It is hardened and tempered in

No	Dimensions of Dies, Inches	Size Dies Inches	Price Each
0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1/8, 1/4, 3/8, 1/2 1/8, 1/4, 3/8, 1/2, 3/4, 1	\$2.75 3.00
1½ and 1¾ 2	3 x3 x ⁸ / ₄ 4 x4 x ⁷ / ₈ 5 x5 x1 ¹ / ₄	1/8, 1/4, 3/8, 1/2, 3/4, 1, 11/4, 11/2 1/2, 3/4, 1, 11/4, 11/2, 2	4.00 5.00 15.00

Dies are made in both Briggs (American) and Whitworth (English) Standard. Right hand and the Briggs Standard dies furnished unless otherwise specified.

Reed Q and E Dies



Cutting chasers are of tool steel, welded into a base of less expensive metal.

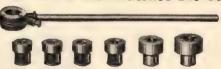
To secure maximum cutting efficiency chasers are set at an unequal angle with pipe to be cut, giving the cutting action of a lathe. Thus, the metal is cut or shaved off, instead of

being scraped off. Right hand Briggs threads furnished unless otherwise specified.

Dies are made both right and left hand, and in Briggs and

AA TTT CAA C	nui uii caus.		
3.7	Dimensions	Sizes, Inches	Price
No.	Inches	Right or Left	Each
0SP	$2 \times 2 \times \frac{1}{2}$		\$1.40
1SP	$2\frac{1}{2}$ x $2\frac{1}{2}$ x $\frac{3}{4}$	$\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ or 1	1.60
$1\frac{1}{2}SP$	3 x3 x 3/4	$\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{1}$, $\frac{11}{4}$	2.00
2SP	4 x4 x 7/8	$\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{1}$, $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{2}{2}$	
3SP	5 x5 x1 $\frac{1}{4}$	- 2½ and 3	9.00

No. 3 Beaver Junior Ratchet Die Stocks



Consists of a ratchet handle holding separate heads for each size die. Ratchet mechanism entirely encased in head. Right or left hand as specified

and the state of the specification of the specifica	
Threads Pipeinches	1/2 to 1
Price, No. 3, 1/8 to 1, Completeeach	\$24.00
Price, No. 3, 1/4 to 1, Complete each	21.00
Price, No. 3, 3/8 to 1, Completeeach	18.00
Price, Extra Dies (4 Chasers) Any Size Rangeeach	2.50
Price, Die Heads, 1/8, 1/4 or 3/8-Incheach	3.00
Price, Die Heads, ½ or ¾-Incheach	3.50
Price, Die Heads, 1-Incheach	4.00
Price, Ratchet Handle Onlyeach	4.00

No. 4 Beaver Easy Working Ratchet Die Stocks



Threads 1 to 2inch pipe using separate dies and bushings for each size pipe. Range can be increased by adding die heads for

adding die heads for ½ and ¾-inch pipe. Dies are the narrow receding type that ease the labor as the thread is cut.

No. 6 Beaverette Easy Working Die Stocks

Threads all four sizes, ¼ to ¾-inch, without changing dies or bushings. A thread may be cut while changing dies in other tools. The two sets of dies covering the different thread pitches are held in one plate, instantly adjusted to any size by the single handle.



A universal centering device does away with loose bushings.

The No. 6 is a compact tool, complete without loose parts. Right or left hand, as specified.

Price, No. 6, Complete......each \$15.00
"Extra Dies, R. or L., ½ or ¼ x ¾ or ½ x ¾
Inches.....per set 3.00

No. 25 Beaver Easy Working Die Stocks



Threads all sizes 1, 11/2, and 2-inch, or variations from standard, without changing dies. A universal chuck centers all sizes. No loose bushings.

Close nipples may be cut with this tool. Instantly adjusted—simply shift the handle to size and the tool is ready. It

uses narrow receding dies that draw back with each turn, removing less and less metal, thus cutting a standard taper thread and easing the work as the thread is cut.

Price, No. 25, Complete.....each \$30.00 Price, Extra Dies, 1, 1½, 1½ and 2-inch, R. H.per set 3.50

No. 26 Beaver Easy Working Ratchet Die Stocks

Threads all sizes, 1, 1½, 1½ and 2-inch, without changing dies. Provided with ratchet attachment for cutting in confined places, or can be used as a regular stock. Contains a universal chuck which means pipe is always straight, without grip screws or bushings to bother.



Uses detachable leader screw. The ideal tool for threading in confined places or at the bench.

Price, No. 26 Complete.....each \$35.00 Price, Extra Dies, 1, 11/4, 11/2 and 2-inch, R.H..per set 3.50

No. 41 Beaver Die Stocks



Threads sizes, 2½, 3, 3½ and 4-inch, or variations from standard without changing dies.

Gears are cut steel and covered which protects tool and operator. No dies to look for—they are all in the tool. Threads are easily cut on pipe in a ditch as well as at the bench. Driving pinion rigidly supported on both ends,

Has bushings and grip screws.

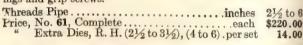
Threads	Pipe		 inches	2½ to 4
Price, No	o. 41 . Comple	te	 each	\$110.06
" E	tra Dies, R.H	1	 \dots per set	9.00

No. 61 Beaver Die Stocks

Two sets of dies are used to cover the unusually large range. One set cuts $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ -inch, and the other cuts 4, $4\frac{1}{2}$, 5 and 6-inch.

Can be used in a ditch or at the bench.

Bearings are bronze bushed. Driving pinion rigidly supported on both ends. Has bushings and grip screws.



No. 80 Beaver Die Stocks



Uses two sets of dies; one set, $4\frac{1}{2}$ to 6, the other, 7 to 8 inches.

The dies are made with wings which hold them rigidly without interfering with the adjustment.

The main body of the tool is steel, all parts made inter-

changeable. All bearings are bronze bushed.

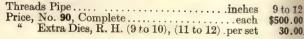
0	_	,		
Threads Pipe.			inches	41/2 to 8
Price, No. 80,	Complete.		each	\$300.00
a Extra D	ies, R.H. ($4\frac{1}{2}$ to 6),	(7 to 8)per set	20.00

No. 90 Beaver Die Stocks

Dies are made with wings which hold them rigidly without interfering with the adjustment.

The main body of the tool is steel, and all parts are made interchangeable.

Uses two sets of dies, one set 9 to 10 inches, the other, 11 to 12 inches.



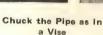


No. 44 Beaver Power Drives

Motor Driven

Range, 1/4 to 6 Inches







Uses any Make of Die Stock



Uses any Make of Pipe Cutter



Makes up Fittings in the Machine



Showing Portability

Cuts, reams and threads pipe and makes up fittings without removing the pipe from the machine. Uses any make of hand tools—converts them into power machines.

The tools revolve, the pipe stands still, thus making it easy to start the tools on the pipe, facilitating oiling, and leaves no revolving tools to endanger workmen.

Threads bolts from ¼ to 2 inches. Range in the machine ¼ to 2 inches; extended to 6 inches for threading and 12 inches for cutting by using universal shaft to drive geared cutters and threaders.

Chuck the pipe as in a vise, then turn on the current. Operates from a light socket. Uses ½-horsepower heavy duty motor.

Sturdy and simple in construction. Easily portable. Base of machine, 18x13 inches; height, 20½ inches; weight, 230 pounds.

110-220-Volt A.C. (60-Cycle, Single-	
tor	each \$3	
15 or 230-Volt D.C. M	lotor	355.00
Extra, 3 Pieces and Borsal Shaft, Extra	oits	10.00

Prices of machines with A.C. motors of odd frequencies, upon application.

Repair Parts for Beaver Operating Ratchets For Nos. 41, 61, 80, 90, 91, 106, 108 and 112 Beaver Die Stocks and Pipe Cutters



Part No.	Name of Part	Price Each
951	Ratchet Frame (with Disc, Key, and Pin).	\$3.50
952A	Ratchet Cover	1.00
953	Ratchet Wheel	1.60
954	Ratchet Pawl	.40
955	Ratchet Pawl Spring	.10
956	Ratchet Disc	.05
957	Ratchet Pawl Key	.05
1936	Pipe Handle with Coupling	1.25
1937	Pipe Handle (Plain)	.75
2043	Ratchet Dowel Pin.	.05
3033	Ratchet Cover Screwseach	.05
Operati	ing Ratchet Complete With Handles	9.00

Repair Parts for No. 3 Beaver Ratchet Die Stocks

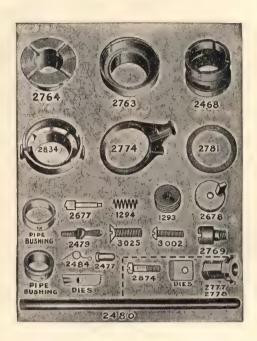
1/8 to 1 Inch



	a d	
Part		Price
No.	Name of Part	Each
1293	Ratchet Pawl Nut	\$.10
2305	Drive Ring.	2.00
2306	Ratchet Wheel	1.00
2310	Wheel Ring	. 60
2339	Pipe Handle	.60
2441	Ratchet Pawl	.20
2442	Ratchet Pawl Washer (with Pin)	.20
2659	Ratchet Pawl Spring	.05
3003	Screws for 1/8 to 3/4 Die Caps. each	.03
3006	Screws for I Inch Die Caps each	. 03
3009	Wheel Ring Screws each	. 05
	1/8 No. 3392) (1/4 No. 2684) (3/8 No. 2333)	1.50
Die	1 ½ No. 2329) (¾ No. 2325) (1 Inch No. 2307)	1.50
Heads	1 (1 Inch No. 2307)	2.00
	For ³ / ₄ Brass Pipe No. 2329-A).	2.00
Die	(1/8 No. 3393) (1/4 No. 3394) (3/8 No. 2334)	.50
Head	1½ No. 2330) (¾ No. 2326)	.70
Caps	11 Inch No. 2308)	.80
Caps	(For % Brass Pipe No. 2330-A)	.80
	Per Single Set	2.50
Dies	(Specify Size wanted; and whether Right or	
	Left Hand; and whether British or Ameri-	

can thread.)

Repair Parts for Nos. 4 and 23 Beaver Die Stocks



Parts for Both Nos. 4 and 23

Part No.	Description	Price Each
2468 2477 2479	Leader Nut Die Spring Pins Grip Screw with Handle	.03
2480 2484 2764	Pipe Handles Die Springs Die Head	.03
2769 2777 2778	Drive Screw Adapter Head, ¾ Inch. Adapter Head, ½ Inch.	.30 3.00 3.00
2874 3002 2476	Die Screws (for above). Die Spring Screws. Pipe Bushing, 1 Inch.	.03
2475 2474 2667	Pipe Bushing, 1½ Inches Pipe Bushing, 1½ Inches Pipe Bushing, 2 Inches.	.60 .60
2472 2471 2470	Set Dies, 1 Inch, Right Hand Only Set Dies, 1¼ Inches, Right Hand Only Set Dies, 1½ Inches, Right Hand Only	3.00 3.00 3.00
2469 2780 2779	Set Dies, 2 Inches, Right Hand Only	3.00
	Parts for No. 4 Only	
1293 1294 2677	Ratchet Pawl Nut	.05
2678 2763 2774	Ratchet Pawl Washer with Pin Die Housing Drive Ring	4.50
2781 3025	Ratchet Retaining Ring	.50
	Parts for No. 23 Only	
2834	Die Housing	\$4.50

Repair Parts for Nos. 25 and 26 Beaver Die Stocks

1 to 2 Inch

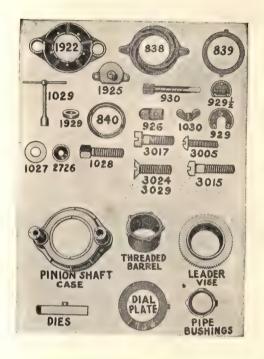


	For Both Nos. 25 and 26	
Part	NT TD 4	Price
No.	Name of Part	Each
809 822	Retaining Ring	\$.60
830	Wing Nut	.20
1199	Wing Nut. Die Cam with Stud and Pin	2.75
1200	Top Plate with Adjusting Screws (Screws No.	
1201	3047) Dial Plate with Pin	1.10
1274	Threaded Barrel—Right Hand	1.50
1274B	Threaded Barrel—Left Hand	1.50
1281	Side Post Stop Pinseach	.05
1317	Barrel Screwseach	.05
1327 1328A	Bottom CollarGrip Screw with Handle	.80
13201	Grip Guide Block No. 1	. 65
1330	Grip Guide Block No. 2	. 60
1331	Grip Guide Block No. 3	. 60
1336	Guide Cam.	1.50
1594 1804	Pipe Handles	.75
3011	Bottom Collar Lock Screw.	.03
3013	Top Plate Screwseach	.03
3047	Top Plate Adj. Screwseach	.03
1321 1321	Set 25-26 Dies—Right Hand	3.50
1321B	Set 25-26 Dies—Left Hand	3.50
	For No. 25 Only	
1198	Die Head—Right Hand	\$4.00
1198A	Die Head—Left Hand	4.00
1204	Side Post Plate with Posts	3.00
1325	Leader Nut—Right Hand	3.50
1325B	Leader Nut—Left Hand	3.50
	For No. 26 Only	
1241	Leader Nut—Right Hand	\$3,50
1241B	Leader Nut—Left Hand	3.50
1289	Ratchet Wheel with Posts	4.50
1290 1291	Drive Ring	3.20
1291	Ratchet Pawl Nut.	.10
1294	Ratchet Pawl Spring	.05
1298	Die Head—Right Hand	4.00
1298A	Die Head-Left Hand	4.00
267 7 2678	Ratchet Pawl	.20
3025	Rat, Retaining Ring Scseach	.03
	and a standard and a	

Repair Parts for No. 41 Beaver Die Stocks

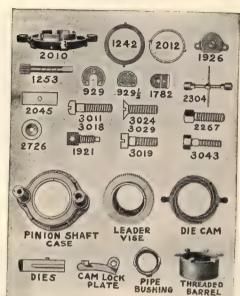
Repair Parts for No. 61 Beaver Die Stocks $2\frac{1}{2}$ to 6-Inch

21/2 to 4-Inch



Part No. 8 Thread Pitch	Name of Part	Price
836 837 838 839	Leader Vise. Pinion Shaft Case Die Cam with Studs and Pins Retaining Ring	Each \$17.00 14.00 9.50 2.60
840 925 926 927	Top Collar . Dial Plate . Cam Clamps . each Dies, per Set .	2.60 4.50 .35 9.00
929 929½ 930 1027	Pinion Retaining Washer Pinion Shaft Case Washer Pinion Top Collar Washer	.60 .50 7.50
1028 1029 1030 1922	Grip Screws each Socket Wrench Wing Nuts each Die Head.	.60 1.60 .20 12.50
1924 1925 1929 2726	Threaded Barrel. Pinion Support. Barrel Key Washer Retaining Ring Washer.	6.00 1.60 .05
3005 3015 3017 3024	Top Collar Washer Screw Barrel Screws each Pinion Support Screws each Retaining Ring Washer Screw.	.03 .05 .08
3029 934	Screws for Parts 929-929½ each Pipe Bushing 2½-Inch	.03
933 932 1031	Pipe Bushing 3-Inch Pipe Bushing 3½-inch Pipe Bushing 4-Inch.	1.80 1.80 1.80

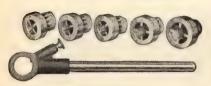
For repair parts for oilwell casing thread tools, give name of part only and state thread pitch and taper.



Part No		
8 Thread Pitch	-	Price
929	Pinion Retaining Washer	Each
9291/2	Pinion Shaft Case Washer	\$.60 .50
1242	Retaining Ring	3.50
1243	Finion Shart Case with Bearing Ring and	0.00
1244	Screws, % Taper	30.00
1253	Leader Vise.	30.00
1781	Pinion. Cam Lock Plate, 3/4 Taper.	8.50
1782	Cam Lock Nut with Pin.	1.60
1921	Cam Stop Screw	.25
1926	Pinion Support	1.80
1927 2010	Threaded Barrel	12.00
2010	Die Head	28.00
2012	Die Cam.	15.00
2034	Top Collar. Set Dies, $2\frac{1}{2}$ - $3\frac{1}{2}$ Inches, American 8 Thread	3.50
2035	Set Dies, 4-6 Inches, American 8 Thread	20.00
XXXX	Set Dies, 2½-3½ Inches. British 11 Thread	20.00
XXXX	Set Dies, 4-6 Inches, British 11 Thread	20.00
2045 2267	Top Collar Lock	.20
2304	Grip Screwseach	.80
2726	Socket Wrench	2.20
3011	Top Collar Lock Screwseach	.20
3018	Barrel Screws each	.10
3019	Pinion Support Screws each	.10
3024 3029	Retaining King Washer Screw	.03
3043	Screws for Parts 929-9291/2each	.03
XXXX	Cam Lock Screw Pipe Bushing 21/4-Inch, used also on No. 106	.10
	Cutter	3.50
1273	Fine Bushing 2½-Inch, used also on No. 106	0.00
	Cutter	3.50
XXXX	Cutter Pipe Bushing 234-Inch, used also on No. 106	
1271	Cutter Pipe Bushing 3-Inch, used also on No. 106	3.50
~=	Cutter used also on No. 106	2 50
1270	Cutter Pipe Bushing 3½-Inch, used also on No. 106	3.50
	Cutter	3.50
1269	ripe busning 4-Inch, used also on No. 106	0.00
1268	Cutter	3.50
1400	Pipe Bushing 4½-Inch, used also on No. 106	m #0
1267	CutterPipe Bushing 5-Inch, used also on No. 106	3.50
	Cutter	3.50
1266	Cutter Pipe Bushing 6-Inch, used also on No. 106	J.00
Ta	Cutter	3.50
For r	epair parts for oilwell casing thread tools give	nama

For repair parts for oilwell easing thread tools, give name of part only and state thread pitch and taper.

No. 00 Toledo Ratchet Pipe Threading **Devices**



Threads 1/8 to

3/4-inch pipe.
Die heads are instantly changed from one size to another by pulling ratchet pawl knob and allowing one

head to drop out and another in. Complete tool consists of ratchet handle and ½, ¼, ¾, ½ and ¾-inch die heads complete with r.h. dies, all packed in a strong carton.

Price, No. 00, Ship. Wt. 10 Lbseach	\$19	00
Price, Ratchet Onlyeach	3	00
Price, 1/8, 1/4, or 3/8-Inch Die Head with Dieseach	3	00
Price, ½ or ¾-Inch Die Head with Dieseach		50
Price, Dies, per Set of 4 Segments	2.	.00

No. 11 Toledo Ratchet Pipe Threading **Devices**



Threads ½ to 11/4inch pipe.

This tool is light and compact and reaches the most difficult corner

Die heads are instantly changed from one size to another by pulling the ratchet pawl knob. Die segments can be removed when dull and easily reground. Complete tool consists of ratchet handle, 1/2,

Price, Ratchet Only....each
Price, ½, ¾, 1 or 1¼-Inch Die Head with Dies.each
Price, ½, a ¼-Inch Dies Only, per Set of 4 Segments
Price, 1 or 1¼-Inch Dies Only, per Set of 4 Segments 4.00 5.00 2.00

No. 0 Toledo Adjustable Pipe Threading Devices



Threads 1/2 and 34-inch with one set of dies; 1/4 and 3/8. inch threads with another set, and 1/8-inch threads with another set. Uses the recedingdie principle for threading

34-inch pipe, making it an easy operating tool. Light and compact, being only 24 inches long from tip to tip of the handles.

No. of Sets of Dies to Stock	3 '
Price, No. 0, Complete each	\$16.00
" Dies per Set of Four Segments	2.50

No. 1 Toledo Adjustable Pipe Threading Devices

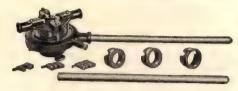
Threads 1 11/4, 11/2 and 2-inch pipe. With this device one man can easily cut 2-inch threads. The No. 1 has a minimum of working parts and is exceed-



ingly strong and durable. It is made both as a right-hand and a left-hand tool-neither will do both.

Right-hand is furnished unless otherwise specified. No. of Sets of Dies to Stock Price, No. 1, Complete each
"Dies, per Set of Four Segments each \$24.00

No. 1A Toledo Adjustable Ratchet Pipe Threading Devices



Threads 1 11/4, 11/2, and 2-inch pipe; equipped with ratchet. The No. 1A may be used with two handles as an ordi-

nary die stock, or with one handle inserted in the ratchet case. It is desirable for threading pipe down a trench, or against walls, between rafters, etc.

Right-hand is furnished unless otherwise specified.

No. of Sets of Dies to Stock	4
Price, No. 1A, Completeeach "Dies, per Set of Four Segmentseach	\$30.00

No. 10 Toledo Adjustable Pipe Threading **Devices**



No.10 threads the entire range of sizes from 1 to 2 inches with one set of dies.

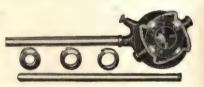
This tool is adjustable for cutting over or undersize threads as well

as standard. Furnished complete with right-hand dies. Left-hand dies can be used in this tool and can be furnished on special order. It requires, however, a separate set of lefthand dies for each size pipe. Shipping weight, 25 pounds.

No. of Sets of Dies to Stock	1
Price, No. 10. Completeeach	\$28.00
Price, Dies, per Set of 4 Segments	2.75

No. 10A Toledo Adjustable Ratchet Pipe Threading Devices

This tool threads the entire range of sizes from 1 to 2 inches with one set of dies and also has a ratchet attachment, making it desirable for use in restricted spaces.



Left-hand dies can be used and can be furnished on special order. It requires, however, a separate set of left-hand dies for each size pipe.

No.	Threads Pipe Inches	No. of Sets of Dies to Stock	Price Complete Each	Price, Die per Set of 4 Segments
10A	1 to 2	1	\$34.00	\$2.75

No. 11/2R Toledo Adjustable Ratchet Threading Devices



A ratchet operated mechanism, light and compact, for threading 21/2 to 3-inch pipe, 8 threads to the inch. Also made as a special tool for threading oil well

tubing for 2, 2½ and 3-inch sizes, 11½ threads to the inch. In ordering, be sure to state whether the standard pipe thread tool or the special oil well tubing tool is desired.

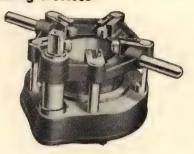
			M0,			Price
			of Sets		Com-	Dies
			of	Ship.	plete	per Set
No. and-	THREAD	s. Inches	Dies to	Wt.	Price	of 4
Thread	Pipe	Tubing	Stock		Each	Segments
1½R— 8 -thread	$2\frac{1}{2}$, 3		2	45	\$45.00	\$4.00
	2/2, 0	0 01/0	-			
1½R—11½ "		$2, 2\frac{1}{2}, 3$	3	47	50.00	4.00

No. 2 Toledo Geared Adjustable Pipe Threading Devices

Threads 2½ to 4-inch pipe. This tool is light, compact and easy to operate.

It takes only a few minutes to cut a thread with it, and it can be put on a pipe in most any place or position.

It is furnished complete with dies, ratchet and driving cross.



No. of	Sets of Dies to Stock	4
Price,	No. 2. Complete.	och \$100 00
Price,	Dies, per Set of Five Segments	8.00

No. 25 Toledo Geared Adjustable Pipe Threading Devices



Threads 7 sizes of pipe, from 2½ to 6 inches inclusive with 1 set of dies. Die segments are mounted on heavy steel holders, which are pushed backward or forward, thus accommodating the dies to the several sizes of pipe. Extra set of dies, ratchet handle and driving cross are furnished with tool. Extra dies of 5 segments supplied at \$8.00 each.

Price, No. 25, Ship. Wt. 231 Lbs.....each \$230.00

No. 21/2 Toledo Geared Adjustable Pipe Threading Devices



Capacity 4½ to 6-inch pipe, inclusive. Furnished complete with ratchet handle and driving cross.

Uses separate set of dies for each size pipe and cuts perfect threads on either wrought iron or steel pipe.

Three sets of dies to the stock. Extra dies of 5 segments, \$12.00 each.

Price, No. 21/2, Ship. Wt. 187 Lbs.....each \$200.00

No. 3 Toledo Geared Adjustable Pipe Threading Devices

Light, compact and easy in operation. Strictly portable. One man can easily and quickly cut an 8-inch thread with it. Complete with dies, ratchet and driving cross.
Will thread pipe from 4½ to 8-inch diameter; 5 sets of dies supplied. Extra dies of 5 segments can be supplied for \$12.00 each.



Price, No. 3, Ship. Wt. 238 Lbs.....each \$300.00

No. 4 Toledo Geared Adjustable Pipe Threading Devices



For use in all fields where it is desirable and necessary to cut threads on large essarv size pipe. Can be taken to the pipe anywhere. Complete with dies, ratchet and driving cross. Will thread, 9 10 and 12-inch pipe. Three sets of dies to the stock.

Extra dies of 5 segments, \$20.00 each.
Price, No. 4, Ship. Wt. 373 Lbs....each \$500.00

Toledo Ratchet Handles and **Driving Crosses**



Each of the geared Toledo tools is supplied, as part of regular equipment, with a ratchet handle and a driving cross. In close quarters, the ratchet handle forms the means of operating the tools. The driving cross can be used by taking 2 or 4 suitable pieces of 1-inch pipe, threading same on one end and screwing them into the sockets, thus making a spider with which the call can be consisted of significantly when there with which the tools can be operated efficiently when there

is room to turn same.

Toledo Ratchet Geared Pipe Cutters



The Toledo Cutters are adapted for cutting off pipe from 21/2 to 12 inches in diameter.

The cutting is done by four knives which are fed by hand. Two of these knives are beveled across the edge and cut out a V-shaped section of the pipe; the other two knives are square and follow in the Vshaped cut and sweep out the edges, thus eliminating any tendency the knives mithave to bind in the cut.

It has been practically impossible to cut off extra heary or double extra heavy pipe with any previously existing hand cutter. These conditions do not affect the working qualities of the Toledo Pipe Cutter in any respect; it merely takes a longer time to cut through the walls of the extra heavy pipe than it does to cut standard pipe.

The tool is fastened to the pipe by a four-jawed chuck, each jaw being actuated independently and containing a set of size marks so the tool can be centered on the pipe quickly.

The knives are straight segments of special steel and can be readily reground. They make a clean, sharp cut, and will cut off a section of pipe only 1 ₁₆ inch long if necessary from end of

pipe.

The tool is driven by a pinion working on a bevel gear—the pinion being operated with a ratchet handle or the Toledo Power Drive

Price is for complete cutter with ratchet handle.

No.	Capacity Pipe Inches	Shipping Weight Pounds	Price Each	Cutter Blades Price
250 300	2½ to 6	121	\$80.00	Set of 4 \$3.20
350	$\frac{41}{2}$ to 8 7 to 10	$\begin{array}{c} 167 \\ 178 \end{array}$	105.00 130.00	3.20 3.20
400	9 to 12	200	150.00	3.20

Toledo Power Drives



The Toledo Power Drive is a mechanism designed to operate Toledo hand pipe threading and cutting tools and other similar devices by electricity. It is approximately 6 feet long, over all; is mounted on wheels that are 18 inches in diameter; weight, from 230 to 255 pounds net, depending upon the type of motor used, the shipping weight being from 325 to 350 pounds. Equipment is portable and can be moved from place to place without any undue effort.



Threading 4-Inch Pipe with a Toledo

Motor on drive is started and stopped by a switch mounted on the shaft housing, and the power is transmitted to the driving head through a two-speed transmission gearing controlled by a knob handle projecting through the fuse box. On slow speed the driving head rotates at 38 revolutions per minute and at high speed at 57 revolutions per minute.

This drive is primarily designed for

No. 2 Tool Operated by Power Drive size of Toledo tools, threading and cutting off pipe from 2½ up to 12 inches. No change is necessary in the threading tool, the operating head of the power drive merely slipping on the pinion shank in place of the ratchet handle.

It is possible, however, to purchase a yoke casting and pair of short handles as the connecting means between the Toledo No. 1 and the Toledo Power Drive for threading 2-inch pipe

and smaller sizes down to 1-inch. Shipping weight, with 50 or 60-cycle a.c. motor, 318 pounds; with 25, 30 or 40 cycle a.c. or with d.c. motor, 363

The price varies, depending upon the type of motor required

Price, with 50 or 60-cycle A.C. or with D.C. Motoreach \$600.00 Price, with 25, 30 or 40-cycle A. C. Motor. each Price, Special Attachment for No. 1 Tool. each

No. 100 Toledo P. D. Threading Devices

An attachment for use with the power drive. offers an unusually rapid oners an industry rapid and efficient means for threading the smaller sizes of pipe. The equipment consists of a chuck that fits into the driving head of the power drive, and of a special threading appara-



tus that attaches to the chuck for threading pipe from 1 to 2-inch, inclusive.

The chuck also makes possible the utilization of a Vosper Pipe Cutter for cutting off pipe from ½ to 2 inches, and the utilization of a No. 00 Toledo Threading Device, or any ordinary stock and die, for threading ½ and ¾-inch pipe. Shipping weight, 42 pounds.

No. of Sets of Dies to Stock	
Price, No. 100, Completeeach	\$60.00
Price. Dies. per Set of 4 Segments.	2.50

Toledo Junior Power Drives

The Toledo Junior Power Drive is designed for operating Toledo threading and cutting tools from 4-inch down but it will also operate the larger tools. It increases the productive capacity of Toledo hand operated tools many times.

In addition to its primary use the Toledo Power Drive has been adapted to other purposes. For instance, it has been used to operate hand winches for raising pipe, radiators, tool chests, etc., to upper floors of buildings. In other instances it has been used for operating bending rolls in sheet metal shops, and other machines where hand cranking has heretofore been used.

This drive is simple in construction, has few working parts, and therefore a minimum upkeep expense. Special operators are unnecessary, for the instructions are few and may be quickly understood by the ordinary mechanic.

The motor is started and stopped by a switch which is mounted on the gear housing. It is not equipped with fuse plugs nor does it have the two-speed transmission gearing.

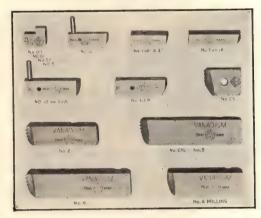
This drive can be connected to an ordinary lamp socket. It is furnished with a ½-h.p. 110-volt motor and operates at but one speed, the driving head rotating at 24 r.p.m.

Twenty feet of flexible cable is supplied with each drive. The machine is approximately 6 feet long over all and is mounted on wheels 18 inches in diameter.

Shipping weight, 225 pounds.

Price, with 1/2-H.P., 110-Volt A.C. or D.C. Motoreach \$450.00

Toledo Dies



This illustration shows a single die segment of each of the

various types used in Toledo pipe threaders.

These illustrations are shown so that there may be no confusion as to which particular model any given set of dies may be for.

The markings on the dies may also be of interest, indicating as they do, the trade mark that appears on all genuine Toledo dies, which is the equivalent of the signature guaranteeing quality.

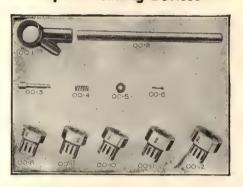
The word Vanadium that appears on some of the segments, indicates the nature of the alloy from which those dies are made.

The small X mark appearing on several of the other segments, means that those dies are made of tungsten high speed steel. Other of the dies are made of a special high carbon alloy. The variation in the kinds of steel used, is the result

of years of experience as to which will give the best possible

Prices upon application.

Repair Parts for No. 00 Toledo Ratchet Pipe Threading Devices



No.					Descrip	tion				Price Each
	Die	s, R	ight-l	and	l, Con	aplete	Set			\$10.00
	***			- 04	Sing	de Set				2.00
	Rat	tchet	Han	dle,	Com	plete.				3.00
00- 2		66	Hea	d ai	nd Ha	ndle (nly			2.00
00 - 3		44	Paw	1						.60
00-4		"	Spri	ng.						. 20
00- 5		66	Paw	IK	nob					.30
		4	**	$-\mathbf{C}$	omple	te				1.10
*00- 6	Die	He	ad Co	ver	Screv	7				.08
00⊢ 8	1/8-	inch	Die I	Teac	l with	Dies.				3.00
00 - 9	1/4	46	44	44	66					3.00
00-10	3/8	44	46	66	44	24				3.00
00-11	1/2	44	16	44	44	66				3.50
00 - 12	3/4	66	44	66	66	46				3.50
*When	orde	ring	00-6	die	head	cover	screw	s. al	wavs	specify
for what	size	die 1	head.					,	200	Pooling

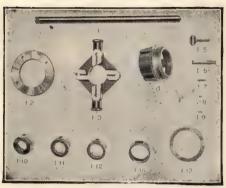
Repair Parts for No. 0 Toledo Adjustable Pipe Threading Devices



No.	Description	Price Each
	Dies, Right-hand, Complete Set	
	" " Single Set	2.50
	Lett-hand, Complete Set	12.50
	" " Single Set	2.50
0-1	Die Head Case	3.75
*0- 2	44 44	
0-3	Retaining Ring.	.50
0-4	Die Head Cover	
*0- 5	Pine Holder	1.25
0- 7	Pipe Holder	2.25
-	Thumb Screw, Each	. 25
0-8	Cover " "	.05
0-9	Die Spring Discs, Each	.05
0-10	Locking Pin and Spring, Each.	.35
0-11	Handles, Pair	2.00
0-12	1/8-inch Bushing.	
0-13		.30
	37 " "	.30
0-14	18 4 4	.30
0-15	72	.30
0-16	3/4 " "	.30
*Whe	en either one of these parts is required they m	net ho

*When either one of these parts is required they must be ordered together, or the complete tool body and dies returned to factory to be properly repaired or replaced.

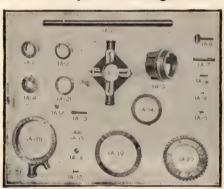
Repair Parts for No. 1 Toledo Adjustable Pipe Threading Devices



No.	Description	Price, Each
	Dies, Complete Set	\$10.00
	" Single Set	2.50
1- 1	Handle, Pair	2.50
1-2	Taper Pin Plate	3.00
*1-3	Die Head	4.50
*1-4	Pipe Holder	3.00
1-5	Thumb Screws, Each	.20
1-6	Taper Pin, Each	.40
	Die Retaining Spring Nail One of	
	" Nail of	.20
	" Pin Each	
Bushings	$1-10, 1''; 1-11, 1\frac{1}{4}''; 1-12, 1\frac{1}{2}''; 1-14, 2''$.50
1-13	Retaining Ring	1.50
*Whe	n either one of these parts is required they	must be

*When either one of these parts is required they must be ordered together, or the complete tool body and dies returned to factory to be properly repaired or replaced.

Repair Parts for No. 1A Toledo Adjustable Ratchet Pipe Threading Devices

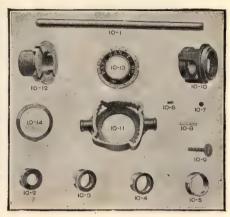


No.	Description	Price, Each
	. Dies, Right-hand, Complete Set	. \$10.00
	. " " Single Set	. 2.50
1A-	1 Handle, Per Pair	. 2.50
Bushir	gs: $1A-2$, $1\frac{1}{4}$ "; $1A-3$, $1\frac{1}{2}$ "; $1A-4$, 1 "; $1A-21$, 2 ".	. 50
*1A-	5 Pipe Holder	3.00
1A-	6 Thumb Screw, Each	.20
1A-	7 Taper Pin, Each	.40
	Die Retaining Spring " " Nail One of Each	
	. " " Nail of	.20
	. " Pin Each	ı
		.10
*1A-	11 Die Head	4.50
1.A-	3 Ratchet Pawl	. 60
1A-	4 Retaining Ring	1.50
1A-	5 Ratchet Spring	.20
1A-	6 "Pawl Knob	.30
	l 8 " Case	3.50
1A-	9 " " Cover	1.30
1A-	O Taper Pin Plate	4.00
	an either one of these moute is required them	

*When either one of these parts is required they must be ordered together, or the complete tool body and dies returned to factory to be properly repaired or replaced.

Repair Parts for Nos. 10 and 10A Toledo Adjustable Pipe Threading Devices

Most of the parts of modern hand-operated threading tools are moving parts and subject to wear. Therewear. fore, when a tool needs a die head, or a pipe holder, or a gear part, it is practically certain that the remaining portions of the tool have been worn through use and will also need attention, or perhaps re-



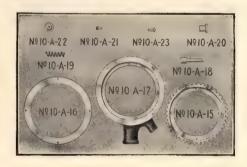
placement. It will be wise to send to factory the complete tool body, together with all the dies belonging thereto, with instructions to put the whole outfit in proper working order.

When a new die segment is wanted for a set of old dies do not ask the manufacturer to supply that segment unless all the remaining parts of the set of dies referred to are sent, so that the new segment may be properly matched in.

	S T T T T T T T T T T T T T T T T T T T	- A
No.	Description	Price Each
	Dies, Per set of 4 Pieces	\$2.75
	" Left-hand, Complete Set	11.00
	" " Single Set	2.75
10- 1	Handle, Pair	2.50
10- 2	1-inch Bushing.	.50
10- 3	11/4 " "	.50
	11/2 " " "	.50
10- 5	2 " "	.50
10- 6	Die Head Cover Screws, Each	.10
10- 7	" Spring Diggs Each	.05
10- 8	" Spring Discs, Each	.20
	" Case Key (Not Used on Present Models)	
10- 9	Thumb Screws, Each	.20
*10-10	Pipe Holder	4.50
10-11	Die Head Case	9.00
*10-12	*******************	4.00
10-13	" " Cover	1.85
10-14	Retaining Ring	1.50
*When	either one of these parts is required they m	ust be
ordered	together, or the complete tool body and d	ies re-

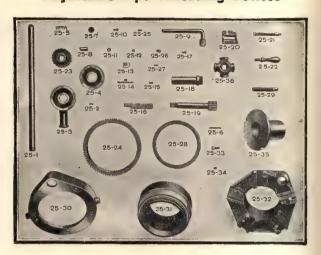
Parts Additional to No. 10 to Make No. 10A

turned to factory to be properly repaired or replaced.



No.	Description	Price Each
10A-15	Ratchet Plate	
10A-16	" Case Cover	
10A-17	" "	
	" Pawl	
	" Spring	. 20
	" Case Screws, Each	.10
	Fawl Khoo	
	Rivets, Each	.05

Repair Parts for No. 25 Toledo Geared Adjustable Pipe Threading Devices



No	Description	Price
	Ratchet, Complete	\$7.00
25-1	Handle	2.00
	Ratchet Case Screw,each	.10
25-3	4 4	3.00
25-4	" Cover	1.00
25-5	" Spring	.20
25-6	Pinion Retaining Pin	.10
25-7	Ratchet Washer	.10
25-8	# Pawl	.60
25-9	Set Screw Wrench.	.60
	Die Retaining Screw, each	.30
	Taper Pin Washer	. 10
	Die Collar	.10
	Dies, per Set of 5 Segments	8.00
*25-14	Adjusting Ratcheteach	4.00
	Die Holder Spring Cover	.10
*25-16	46 46	5.00
	Head Cover Screws	.10
**25-18	Pinion Sleeve	5.00
**25-19	Driving Pinion	7.00
25-20	Die Head Covereach	. 80
25-21	Taper Pin	3.00
25-22	Lifting Handle	1.50
25-23	Ratchet Wheel	1.50
725-24	Gear Band	20.00
	Die Holder Spring, each	.10
	* " Pawl "	1.00
	" " " Pin., "	. 10
25-28	Retaining Ring	4.00
25-29	Set Screweach	1.25
25-30	Taper Pin Plate	8.00
†25–31	Pipe Holder	30.00
†25 –32	Die Head	45.00
25-33	Bushing Screweach	.30
	Die Head Button	.10
25-35	Bushing (2½, 3, 3½, 4, 4½, or 5 Inches) "	5.00
25-36	Driving Cross.	1.00

*When these parts are ordered the old parts must be returned to factory in order to properly match up new parts.

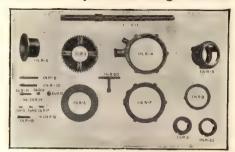
**When either one of these parts is required, the other part should be returned so the new one can be properly fitted or both parts should be ordered to insure proper fit.

†When any of these parts are required they must be ordered together, or complete tool body returned to the factory for proper repairs.

When ordering repairs always specify serial number and prefixing letter, if any, which appear on the brass name plate of the tool.

Prices apply only for standard parts; other tool parts will be quoted on specially as occasion arises.

Repair Parts for No. 1½-R Toledo Ratchet Pipe Threading Devices



No.	Description	Each	No	Description	Price
	Dies, Com.,	1160077			Басц
	Set (11½		11/D 100	Taper	
				Pins.each	\$.75
	Pitch)\$	12.00	1½R-11	Ratchet	
	Dies, Com.,		41/D 40	Pawl	. 60
	S e t (8	0.00	$1\frac{1}{2}$ R-12	Ratchet	
	Pitch)	8.00	41/70 44	Bushing	. 60
	Dies, Single		$1\frac{1}{2}$ R-13	Ratchet	
	Set	4.00	- 0 4	Knob	.30
1½R-1	Handle	3.00	11/2R-14	Ratchet	
$1\frac{1}{2}R-2$	Lead Screw	3.60		Spring	.20
11/2R-3	Ratchet			Ratchet	
	Die Head	6.00		Case Screw	. 10
$1\frac{1}{2}R-4$	Ratchet			Die Head	
	Case	4.50		Rivet	.05
$1\frac{1}{2}R-5$	Pipe Holder	6.00	$1\frac{1}{2}$ R-18	Set Screw	.20
$1\frac{1}{2}$ R-6	Taper Pin		$1\frac{1}{2}$ R-20	6 4	
, =	Plate	3.60	- / 4	Wrench	.60
1½R-7	Ratchet Cover	2.00	$1\frac{1}{2}$ R-22	2½-i n c h	.00
1½R-8	Retaining Ring	1.50	- /2-0	Bushing	.90
. –	0 0		7 701. 3		. 30
	Die Retaining	s oprine	gand Pin	One or	
11/D 01		//	Screw	Each	\$.20
$1\frac{1}{2}$ R-21	2-inch Bushi	ng (for	Special Too	1)	. 90

Repair Parts for No. 2 Toledo Geared Adjustable Pipe Threading Devices



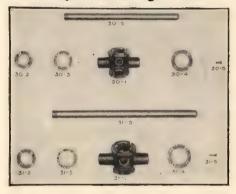
-7	75 L II	Price			Price
No.	Description	Each	No.	Description	Each
	Dies Com. Set	\$32.00	2-11	Pinion Retain-	
	" Sing. "	8.00		ing Pin	\$.10
	Ratchet, Com.	7.00	2-13	Set Screw	. 20
2-1	Handle	2.00	2-16	2½-in, Bushing.	1.80
	Lifting Handle.	1.25	2-17	3-in. Bushing	1.80
	Ratchet Cover Screw	.10	2-18	3½-in. Bushing.	1.80
2-3	Ratchet Case	3.00	2-19	4-in. Bushing.	1.80
2-4	" "	0.00	2-20	Driving Pinion	5.00
	Cover	1.00	2-21	Retaining	3.00
2- 5	Ratchet	1.00	4-41	Ding	9.00
_ 0		20	0.00	Ring	2.00
2- 7	Spring	.20	2–22	Taper Pin	
2- 1	Ratchet			Plate	4.00
	Spring		2-23	Ratchet Wheel	1.50
	Washer	.10	2 - 24	Taper Pin	. 60
2-8	Ratchet Pawl	.60	2-25	Gear	17.00
2-9	Set Screw Wrench	. 60	2-26	Die Head	20.00
2-10	Pinion Sleeve	3.50	2-27	Driving Cross	1.00
				One	1.00
	Die Retaining	"		of	
	u u	Pin			e 20
		T TIT	, ,	Each	φ.20

Repair Parts for No. 2½ Toledo Geared Adjustable Pipe Threading Devices



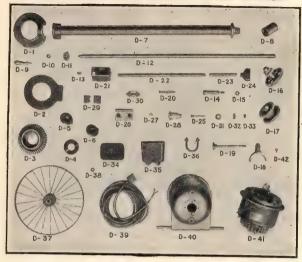
		Price			Price
No.	Description	Each	No.	Description	Each
	Dies Com. Set	\$36.00	$2\frac{1}{2}$ -11	Pinion Sleeve	\$5.00
	Dies Sing. Set	12.00	2 1-12	Lifting Handle.	1.50
	Ratchet, Com		2 ¹ / ₂ -13	Set Screw	.40
	Handle			41/2-Inch Bushing	
	Ratchet Case			5-Inch Bushing	5.00
	Screw	.10		Driving Pinion.	7.00
$2\frac{1}{2}$ - 3	Ratchet Case			Taper Pin	2.50
	Ratchet Case	5.00		Retaining Ring.	4.00
-2 -	Cover	1.00		Taper Pin Plate	12.00
21_ 5	Ratchet Wheel.				50.00
	Ratchet Spring.		21 26	Gear	
				Die Head	65.00
	Ratchet Washer		23-28	Driving Cross	1.00
	Ratchet Pawl				
$2\frac{1}{2}-10$	Set Screw	7			
	Wrench	.60			
	Die Retaining	Spring	and Pin.	One of	
	Die Retaining	Spring	Screw	Each	.20
		~h-mg	~~~) Lawell	.20

Repair Parts for Nos. 30 and 31 Toledo Pipe Threading Devices



· No. 30	
No. Description	Price, Each
Dies, R. H., Complete Set	\$6.00
Dies, R. H., Single Set	2 . 00
30-1 Body Univ	5 . 50
30-2 %-Inch Die Head Cover	
30-3 ½-Inch Die Head Cover	
30-4 %-Inch Die Head Cover	
30-5 Handles, per Pair	2 . 2 5
30-6 Head Cover Screw	
No. 31	
Dies, R. H., Complete Set	\$6.50
Dies, R. H., Single Set \(\frac{1}{2} \) or \(\frac{3}{4} \)-In	ch 2.00
Dies, R. H., Single Set 1-Inch	2 . 50
31-1 Body Only	7 . 00
31 2 /2-Inch Die Head Cover	
31-3 %-Inch Die Head Cover	
31-4 1-Inch Die Head Cover	
31 5 Handles, per Pair	2 . 50
31-6 Head Cover Screw	

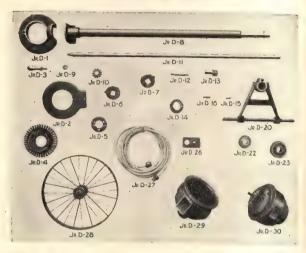
Repair Parts for Toledo Power Drives



Specify part as well as serial number of drive. When any part of motor gearing assembly (part No. D16) is needed, old assembly should be returned for salvage.

No.	Description	Price, Each
D- 1	Bevel Gear Case Cover	\$10.00
D- 2	Bevel Gear Case Cover	10.00
D- 9	Lifting Handle	1.50
D- 3	Bevel Gear	14.50
D- 4	Driving Bushing Collar.	1.25
D- 5	No. 3 Driving Bushing.	
D- 6	No. 2 Driving Bushing.	3.50
D- 7	Shaft Casing.	3.50
D-10	Bevel Pinion Nut.	47.00
D-11	Bevel Pinion	.30
D-13	Bevel Pinion Key.	12.00
D-12	Driving Shoft	.25
D-14	Driving Shaft. Motor Gearing Stud.	8.50
D-15	Motor Gearing Stud Nut.	5.75
D-16	Motor Gearing, Including Bronze Pinion	.30
D-31	Motor Pinion and Korr	22.00
D- 8	Motor Pinion and Key.	2.30
D-17	Sliding Gear Drum	7.00
D-32	Sliding Gears.	15.00
D-32 D-33	Sliding Gear Locating Spring.	.20
D-33 D-18	Sliding Gear Locating Pin. Shifter Fork and Set Screw.	.20
	Shifter Fork and Set Screw.	2.10
D-19	Shifter Fork Push Rod and Knob.	2.70
D-20	Shifter Fork Stud	1.50
D-21	Switch Box.	4.90
D-39	20 Feet Cable and Connector2-Wire	17.50
D-39	20 Feet Cable and Connector—2-Wiro	10.50
D-29	Connector for 3-Wire Cable.	4.80
D-29	Connector for 2-Wire Cable	4.00
D-30	Switch, Push Button (Old Style). Switch, Toggle Joint (New Style).	2.50
D-30	Switch, Toggle Joint (New Style).	6.00
D-22	SWILED DOX CONDUIT	1.20
D-23	Fuse Box Conduit	.50
D-24	Fuse Box Conduit Condulet, Specify Serial No. of Drive	2.00
D-26	Puse Diock	4.00
D-27	Fusible Link	.20
D-28	Fuse Plug	3.00
D-34	Fuse Box Cover	1.50
D-35	ruse Box	10.00
D-36	U-Bolt	1.90
D-37		4.00
D-38	Wheel Retaining Washer Gear Housing, Specify Serial No. of Drive. Motor, Specify Serial No. of Drive. Motor, Specify Serial No. of Drive. Motor, Specify Serial No. of Drive. Oil Tube. Oil Hole Cover. Wheel Retaining or Case Cover Screws. Upper or Lower Bearing Screws. Sliding Gear Drum Screw Switch Box Screw. Switch Handle Mechanism. Fuse Box Cover Screw.	
D-40	Gear Housing, Specify Serial No. of Drive.	.10 62.00
D-41 D-41	Motor, Specify Serial No. of Drive.	300.00
D-25	Oil Tube	400.00
D-42	Oil Hole Cover.	. 60
	Wheel Retaining or Case Cover Screws.	. 10
	Sliding Gear Drum Screw	. 15
	Switch Box Screw	. 05
	Switch Handle Mechanism.	. 05 4. 80
	Fuse Box Cover Screw Condulet Screw Gear Housing Screw Bronze Pinjon Only	. 10
	Gear Housing Screw	.05
	Bronze Pinion Only	. 15 11.00
	Bronze Pinion Only No. 2 Safety Driving Bushing No. 3 Safety Driving Bushing	4.00
	rto, o Salety Driving Bushing	4.00

Repair Parts for Toledo Junior Power Drives



When ordering new parts, specify part number as well as serial number of drive. Always specify serial number of drive, shown on brass name plate.

When ordering motor give full details as to the character of current.

	n					- 4
0	r	01	71	'n	01	n 1

		0 :
No.	Description	Price Each
Jr. D- 1	Bevel Gear Case	\$10.00
Jr. D- 2	Bevel Gear Case Cover.	10.00
Jr. D- 3	Lifting Handle	1.50
Jr. D- 4	Bevel Gear.	14.50
Jr. D- 5	Driving Bushing Collar.	1.25
Jr. D- 6	No. 2 Driving Bushing.	3.50
Jr. D- 7	No. 3 Driving Bushing	3.50
Jr. D- 8	Shart Casing	40.00
Jr. D- 9	Bevel Pinion Nut.	.30
Jr. D-10	Bevel Pinion	12.00
Jr. D-11	Driving Shaft.	8.50
Jr. D-12	Gear Stud.	4.00
Jr. D-13	Shaft Gear Pinion	10.00
Jr. D-14	Shaft Casing Collar	2.50
Jr. D-15	Shaft Casing Saddle Pawl	.50
Jr. D-16	Shaft Casing Saddle Pawl Spring.	.30
	Shaft Casing Collar Screw (Not Illus.)	.40
Jr. D-20	Shaft Casing Saddle	30.00
Jr. D-22	Shart Gear. *	6.00
*Jr. D-23	40-Tooth Gearper pair	16.00
Jr. D-26	Switch Cover	1.50
Jr. D-27	Cable with Connector and Plug.	12.00
Jr. D-28	Wheels	4.00
Jr. D-29	Gear Housing.	50.00
Jr. D-30	Motor	185.00
	Not Illustrated	-55.00

Not Illustrated

Description	Price Each
Wheel Retaining Screw	\$.10
wheel Retaining Washer	.10
Case Cover Screw.	.10
Switch Box Cover Screw.	.05
Gear Housing Screw.	
Caging Saddle Cover Serem	.15
Casing Saddle Cover Screw.	.20
Oil Hole Cover.	.60
Gear Stud Nut.	.20
Driving Bushing Collar Screw.	.10
Upper Bearing Screw	.15
Shart Gear Nev.	.20
Shall Gear Retaining Screw	.20
Shaft Gear Retaining Washer.	.30
Switch.	3.00
Motor Brushes	.60
End Plate, with Bearing.	00.
End Plate Loss Possing	22.00
End Plate, Less Bearing.	
No. 2 Safety Driving Bushing.	4.00
No. 3 Safety Driving Bushing	4.00
*These gears must be supplied in pairs to insure	teeth
meshing properly	000011

meshing properly.

Curtis Pipe Cutting and Threading Machines

With Opening and Adjustable Dies



These machines require but little power to operate, take up little floor space and are light in weight. Pipe bends may be threaded as easily as straight pipe. Machines are equipped with automatic oiling device and die release. Dies are interchangeable.

Curtis Hand Machines

Dies are adjustable to allow for variations of fittings. Special dies for any pitch or taper of thread, supplied if desired. Regular equipment consists of adjustable pipe rest, ratchet wrench, dies, cut-off tools and wrenches. Nos. 30, 42 and 58 are designed to stand on bench, Floor stand and

high adjustable pipe rest,\$100.00 list price.

Combined Hand and Belt Driven Machines

Same as Curtis Hand Machine with countershaft and spur gears added. Equipped with standard countershaft, pipe rest, dies, cut-off tools and wrenches. For machines 6-inch and less, iron cabinet base and high adjustable pipe rest \$100.00 list extra. All machines above 6 inches include floor base.

Direct Connected Electric or Hand Machines

Similar to hand machine with die head rotated by electric motor. Base is provided with oil drip pan and reservoir into which the oil is strained, then pumped through system. Machines up to 4 inches designed to stand on bench. Floor base and adjustable pipe rest \$100.00 list extra. Machines larger than 4 inches include floor base. State motor requirements, whether A. C. or D. C., phase and cycle. All furnished with commercial motor, adjustable pipe rest, ratchet wrench for hand operation, dies, cut-off tools and necessary wrenches.

Hand Machines

		Bench								
		or					No.			
		Floor					Dies	Cut-	Net	
_	Range	Space	Ht.		Speed		202	off	Wt.	Price
No	Inches	Inches	In.	Sets	R.P.M.	H.P.	. Set	to	Lbs.	Eaca
30	1/4-2 R.H.	14x14	17	4			3	0	180	\$170.00
37	1/2 -3 R. H.	13x15	19	4			4	4	235	275.00
42	1-4 R. H.	17x18	22	4			4	4	350	370.00
58	1-6 R. H.	23x21	26				4	3	550	635.00
65	1 to 8 R. H.	27x24		-			Â			1200.00
69	21/2 to 12 R. H.	38x32		-			D			
					1 1 1 1		6			2170.00
69 -B	8 "16 R. H.	45x32	52	4			*	2 3	3400	3000.00

Belt Driven Machines

70	1/4 to 2 R. H.	22x16	20	4	 	3	0	392	\$335.00
77	½ " 3 R. H.	17x27	23	4	 	4	4	428	440.00
84	1 " 4 R. H.	24x20	27	4	 	4	4	668	535.00
96	1 " 6 R. H.	36x23	31	4		4	3	1545	835.00
98-A	1 "8R.H								1785.00
108-A	2½ to 12 R. H.	60x32	65	4	 	6	3	5150	3000.00
120	8 ID to 16				 	_	_	0200	
	OD R. H.	60x36	82	4	 	*	2	4350	4500.00

Direct Connected Electric Machines

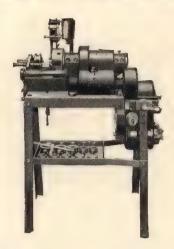
430	1/4 to 2 R. H.	24x16	20	4	1800	1	3	3	425	\$725.00
437	1/2 " 3 R. H.	17x27	23	4	1800					880.00
442	1 " 4 R. H.	29x21	28	4	1800					975.00
258	1 "6 R. H.	28x34	53	4	1800					1585.00
265	1 "8 R. H.	38x38	58	4	1800					2420.00
269	2½ to 12 R. H.	45x40	72	生	1800					4000.00
269- $ m B$	8 ID " 16									
	OD R. H.	52x48	86	4	1800	5	*	2	6000	5200.00

*8 to 11 inches, 6; 12 to 16 inches, 12.

Cut-off attachment and tools for No. 30 and No. 70, \$35.00 list extra.

No. 1000M Toledo Motor Driven Pipe Machines

Capacity, 1/2 to 2-Inch Pipe, Inclusive



A highly efficient cutting, threading and reaming machine for ½ to 2-inch pipe, complete in every detail and equipped with ½-horsepower motor that can be connected to the ordinary lamp socket.

Pipe is gripped by a powerful self centering chuck and is rotated while being cut or threaded.

The cutting-off tool and its accompanying mechanism are mounted on a swinging arm, which can be instantly placed in position for operation or can be turned back out of the way. Cutting-off tool is made of high speed steel and has a secondary cutting edge for chamfering the end of the pipe, a desirable adjunct, facilitating as it does the proper centering and easy starting of the threading dies. Likewise, from the other side, the threading dies are mounted on a swinging arm, which can instantly be placed in operating position.

Mounted on the arm that carries the die heads, is a reaming tool, which simultaneously with the threading, will ream out the inside edge of the pipe, clearing it of any obstruction. This reamer will be especially appreciated by the installer of electrical conduit.

There is a separate die head and bushing for each size pipe, and a feature peculiar to this new machine is the ease and speed with which one die head can be substituted for another one when threading different sizes of pipe. This change from one size die head to another can be easily made in 10 seconds. It is only necessary to use the bushings when cutting or threading pipe 6 feet long or longer.

An oil receptacle mounted on a swinging arm and fitted with spout and valve, insures a constant flow of oil on the threading dies or cutting-off tool. An oil strainer and pan beneath the chuck, separating the oil and chips, makes it possible to use the same oil again and again.

The machine is also fitted with a special throweut clutch, which automatically releases, if too much strain is imposed on same, and thus protects all parts from possible damage. There are just 5 convenient oil holes, thus requiring the minimum attention to up-keep. There is no exposed gearing to endanger the operator.

A ½-inch pipe is threaded in 13 seconds, a 1-inch pipe is threaded in 14 seconds, and a 2-inch pipe in 28 seconds.

A ½-inch pipe is cut off in 7 seconds, 1-inch pipe in 10 seconds, and 2-inch pipe in 14 seconds.

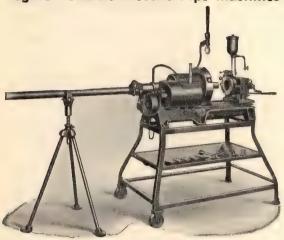
Its net weight is but approximately 450 pounds, and it is easily moved by 2 men. Compact, measures 54 inches high, 24 inches wide, and 42 inches long.

Furnished complete with dies and bushings from $\frac{1}{2}$ to 2 inches, cutting off and chamfering tool, reamer and chuck wrench.

Shipping weight, 560 pounds.

Price, No. 1000M, Complete.....each \$850.00

Rogaco Portable Electric Pipe Machines



Machine Mounted on Truck Stand, with Roller Bearing Tripod Pipe Support Holding Pipe

The Rogaco Portable Electric Pipe Machine is designed for cutting off, reaming, threading and making on fittings. It is suitable as a bolt, bar or pipe machine. The bar or pipe is held in the universal chuck, and is centered at the rear end of the spindle by a special centering device. The pipe at the cut-off tool is centered by hardened V jaws. This gives three centering points. The machine cuts threads which are straight and true to gauge.

It is equipped with a gear shift which gives two spindle speeds right and two left hand. A vertical lever controls the speed changes. A horizontal lever operating on the side controls the direction in which spindle revolves.

The standard equipment of the Rogaco Pipe Machine includes a special motor, enclosed in a dirt and grease-proof case, single and double engineers' wrenches, electric cable with lamp socket connections, and a full set of right-hand dies 3% to 2 inches, or a Rogaco quick opening die complete with chasers ½ to 2 inches, whichever is desired.

All controls are within easy reach of the operator. The motor can be started or stopped instantly by turning a snap switch. The carriage is controlled by a lever operating through a rack and pinion. There are special cut-outs on the carriage which throw it out of mesh automatically.

This machine will thread pieces of pipe as short as 31/2 inches end to end. Close nipples or thread to thread nipples can be cut by use of the Rogaco nipple chuck, which is furnished as an accessory when desired.

With the Rogaco reversible power drive attachment and hand geared stocks, such as Beaver or Toledo, the capacity of the machine can be increased to 8 inches in diameter, or even up to 12 inches. With this attachment it is not necessary to back off by hand; the machine is reversed and it backs off by power.

on of position		
	Approx	
70 1.11	Ship.	
Description	Wt., Lb	s. Each
Machine Complete with Right-Hand Solid Dies		
3/8 to 2-Inch, or Rogaco Quick Opening Die		
with Chasers ½ to 2-Inch, and Either an		
A. C. or D. C. Motor of Standard Current		
Characteristics	600	\$469.00
Angle Iron Truck Stand	100	25.00
Rogaco Reversible Power Drive	30	25.00
Roller Bearing Tripod Pipe Support	30	13 50
Rogaco Nipple Chuck with Bushings 3/8 to 2-In.	20	30.00
Extra Motor, Either A. C. or D. C	100	108.50
Extra Sets of Chasers for Opening Die Sizes		
½ to 2-Inch, Six Sets, Four Chasers to a Set.		
per set	1	4.00
Extra Solid Dies, Sizes 3/8 to 2-Inch, Seven		
Diesper set	14	16.79
Extra Bushings for Nipple Chuck, 3/8 to 2-Inch,		
Seven Setsper set		1.65
Rogaco Quick Opening Die Complete with		
Chasers ½ to 2-Inch.	38	55.00

Red-E-Hall Portable Power Pipe Threaders

1/4 to 2-Inch Pipe
1/2 to 11/2-Inch Bolts with Hand Stocks up
to 12-Inch, Universal Shaft



This machine is constructed with a built-in truck which can be elevated quickly for portable operation. Has a friction clutch for stop and start, and a reversible 1-h.p. motor. The silent chain drive, flexible yet positive, is fully guarded. Timken roller bearings throughout are self-oiling and adjustable.

Three cutting speeds, extra fast for cutting off, can be changed quickly. Close nipples can be threaded without extra equipment, using the standard chuck. Threads right and left hand, cuts off and reams.

and left hand, cuts off and reams.

Specifications.—Cutting speed, 16 feet per minute; carriage travel, 11 inches maximum; 4 dies to a set, 4 sets required; diameter hole in spindle, 2½ inches; diameter hole in head, 3 inches; motor speed, 1750 r.p.m.; floor space, 38x26 inches; height over all, 43 inches; height, floor to center of spindle, 36 inches. Weight, 450 pounds; shipping weight, 530 pounds.

Standard Equipment

A C or D C motor and 18 feet of heavy involved and and

A.C or D.C. motor and 18 feet of heavy insulated cord and connection. A.C. motor furnished for 110-220-volt, 60-cycle, 1, 2 or 3-phase; 440-volt upon application. D.C. motor furnished for 115-230-volt; 550-volt upon application.

Die head, complete with quick opening and closing device, micrometer adjustment and internal oiling system.

Eight sets of dies: 4 sets covering the complete range, 14 to % inch; 1/2 to % inch; 1 to 11/4 inches, and 11/2 to 2 inches. Briggs standard right hand pipe threads. Four extra sets are spare as listed above, or other sizes at option of purchaser.

Heavy duty type cutting-off attachment with double bevel, high speed cut-off tool. Swivel type reaming and chamfer attachment with high speed reversible tool bit.

Self-centering scroll chuck on rear spindle with hardened steel jaws.

Double opposed V blocks for high speed cutting-off. Special driving chuck, 3-jaw, universal with special patented combined pipe and nipple jaws for holding pipe, ¼ to 2-inch, and for threading close nipples.

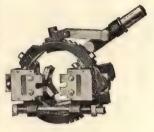
Reversible, rotary-geared oil pump, complete with all connections; 2 gallons Red-E-Cut pipe threading oil.

Complete set of wrenches. Price, Complete with Standard Equipment...each \$485.00

Extra Equipment	
Price, R.H. Briggs Standard Pipe Dies per set	\$5.50
Price, L.H. Briggs Standard Pipe Diesper set	6.00
Price, R. & L. U.S.S. Bolt Dies	6.00
Price, Gripping Chuck Jaws, Std. for Pipe Only, per set	12.00
Price, Gripping Chuck Jaws, for Pipe and Nipples. per set	15.00
Price, Cut-Off Tool, High Speedeach	1.25
Price, Reamer Tool, High Speedeach	.75
Price, Chuck Wrenchesper set	2.10
Price Universal Drive Shaft for Hand Stocks 21 to 12 Inch each	25 00

No. 10 Beaver Ratchet Pipe Cutters

A development of the smaller sizes of Beaver Square End Pipe Cutters, the same knife construction being used. The frame of the No. 10 is divided into two principal parts, a chuck or gripping part and the cutting section which carries the knives and is revolved on the frame by a ratchet. The frame can be broken and placed around a pipe when necessary.



No.	Cuts Pipe Inches	Shipping Weight Pounds	Complete Price Each	Cutters Price per Pair
10	$2\frac{1}{2}$ to 4	55	\$90.00	\$2.50

Nos. 106, 108 and 112 Ratchet Pipe Cutters

These cutters have the same knife construction as the smaller sizes, but on account of the large capacity the adjustment for different sizes is made by adjusting the knife blocks separately. These tools are operated by a ratchet handle applied to driving pinion which operates a worm gear. When desired power can be applied instead of the hand ratchet on the driving pinion.



No.	Cuts Pipe Inches	Shipping Weight Pounds	Complete Price Each	Cutter Price per Pair
106	2½ to 6	130	\$180.00	\$5.00
108	41/2 " 8	190	225.00	6.00
112	9 " 12	235	300.00	12.00

Saunders Type Pipe Cutters

Roller Style especially good where cutter can be revolved entirely around



tirely around pipe. Cuts without leaving burr. Cutter has hardened tool steel facing in the swinging block at the point where the screw bears on it to prevent wear. It is extra strong at foot of sleeve handle.

	Cuts Pipe	Price	Ppr	CE, PER DO	ZEN-	PRICE,	
No.	Inches	Each	Wheels	Rollers	Pins		and Screws
18	1/8 to 1	\$3.00	\$2.88	\$2.88	\$1.20	\$1.25	\$1.00
2 S	1 " 2	4.50	3.84	3.84	1.20	1.75	1.25
3 S	2 "3	11.00	7.20	6.00	1.80	2.75	1.75
4 S	21/2 " 4	18.00	7.20	6.00	1.80	3.50	3.50
5 S	4 6	28.00	7.20	7.20	1.80	4.00	5.00

Barnes Type Pipe Cutters



Three wheel style, suitable for use where cutter cannot be. revolved e n t i r e l y around pipe.

	Cuts					PRICE, EAC	
	Pipe	Price		er Dozei		Slide and	Handle
No.	Inches	Each	Wheels	Pins	Body	Wheel	and Screw
1B	1/8 to		\$3.00	\$1.00	\$1.75	\$.75	\$1.00
2B	1/2 " 2	6.00	3.60	1.00	2.60	1.00	1.25
3 B	11/2 " 3	3 10.00	4.80	1.00	4.55	2.00	2.25
4B .	21/2 "	20.00	6.00	2.00	9.50	4.50	4.50
5 B	4 " (30.00	9.00	2.00	13.75	7.00	7.00
6 B	6 " 8	3 40.00	9.00	2.00	20.00	8.50	9.25
61/2B	8 "]	10 45.00	9.00	2.00	23.00	9.50	10.25
7B	9 "	2 50.00	9.00	2.00	25.00	11.25	11 50

Beaver Square End Pipe Cutters

Cuts pipe square and clean, leaving no burr.



Trimo Pipe Cutters



Made with one cutting wheel and two rolls or with three cutting wheels.

The wheels are manufac-

tured of chrome vanadium steel. Has no thread in the frame or roll block. A small case-hardened nut adjusts handle screw which can be replaced when worn. Converted into a three-wheel cutter by substituting two wheels for the two rolls.

				PRICE,	EACH -		
	Cuts		Knife	Knurled		Han	dle Cnly
	Fipe	Com-	Edge	Edge			rithout
No.	In.	plete	Wheels	Wheels	Rolls		rew Rod
1	1/8 to 11/4	\$4.50	\$.40	\$.60	\$.30	\$.35	\$.50
0	1/ 6 0	,			4		
2	-/4 " Z	6.00	. 40	. 60	. 30	.35	. 50
3	1 " 3	10.00	. 50	.90	.40	.40	.50
_		20100			. 10	. 10	. 30

Trimo Thin Pattern Pipe Cutter Wheels



Made of Chrome Vanadium Steel. Makes a quick, thin, clean cut on the pipe. Same size wheels for both No. 1 and 2. Larger size for No. 3.



Nye Knife Blade Cutter Wheels



Made from high grade tool steel, hardened and tempered in oil. The blades are less than 1/8th of an inch thick and are straight from the hub to the cutting edge.

They cut with one-third the power and time required by the old type wheels.

Made both knurled and smooth-edged; same price.

			PRICE	, EACH-		
Wheel				VPE -		
No.	Barnes	Saunders	Nve	Trimo	Armstrong	Holland
1	\$.50	\$.50	\$.70	\$.60	\$.50	\$.50
2	.60	. 60	.80	. 60	. 60	. 60
3	.80	1.10		.90	1.10	1.10
4	1.00	1.10				
5	1.10	1.10				

Nye Cutter Pins

			PRICE, PE	R DOZEN-		
No.	Barnes	Saunders	Trimo	Nye	Armstrong	Holland
1	\$1.00	\$1.20	\$1.00	\$1.20	\$1.20	\$1.20
2	1.00	1.20	1.00	1.80	1.20	1.20
3	1.00	1.80	1.00		1.80	1.80
4	2.00	1.80			* * * *	
5	2.00	1.80		* * * *		

Nve Cutter Rollers

		P	TYPE DOZ	ten	
No.	Nye	Saunders	Trimo	Armstrong	Holland
1	\$.24	\$.24	\$.25	\$.25	\$.24
2	. 50	.32	.25	.30	.32
3		.50	.50	. 50	.50
4		.50			
5	* * *	. 60	1 * *	• •	

No. 1 Williams' Vulcan Pipe-vise Clamps



This clamp is designed for fastening No. 1 Vulcan Vise to table, bench or other support which it is desired to avoid marring by the use of screws or bolts. It is quickly and easily applied.

The clamp is drop-forged from a strong, tough grade of special steel, and is heat-treated to further increase its stiffness and strength. The screws are also drop-forged; the swivel is of wrought steel.

	Ext	REME			PRICE,	Extra
No. 1		DY, IN. Wdth.	Size Diam.	Screw, In. Leth. $3^{5}/8$	Complete Clamp \$1.75	Screw and Swivel not Assembled \$.50

Williams Vulcan Drop-Forged Chain Pipe Vises

Unbreakable, compact, rapid in action and positive in grip.

It is made entirely of wrought steel with drop-forged jaws, saw tempered for

file	sharp	ening.	,					8	
	The di	fferent si	zesar	e equa	lly serv	ice-			I
hei	e upo ach or	n and sui	itable	for fa	stening	g to			
001	1011 01								
	Cap.	Approx. Size	Approx.	Price Com-	I	RICE, Ex Chain	TRA PAR	Handle	1
No.	Pipe In.	Folded In.	Wt.	plete Each	Jaws per Pr.	with Screws		with	77.
1	1/8-2	4x5x6	4	\$7.00	\$3.00		Screws	Nuts \$2.20	Nuts
2	1/4-4 1/2-6	6x8x8	10	15.00	7.00	4.80	1.40	4.20	2.70
4	1/2-8	8x9x11 8x10x12		27.00	12.00	9.00	2.50	7.00	4.00

8x10x12 30 36.00 18.00 12.00 2.50

No. 51 Reed Strap Vises

For Polished Pipe and Tubing

This vise does not require a separate bushing for each size.

Change for different sizes is made instantly with tightening screw.

Straps are of fine grade linen webbing and are subject to very little wear in use. Rosin or chalk should be used to prevent

slip	ping.					
No. 51	Holds Pipe Inches 1/8 to 2	Length 17	Width	Wt. Lbs. 9½	PRICE, EA	Extra Strap

Giant Pipe Pushers



Will push length of water, gas or electric pipe up to 200 feet through any soil a spade will dig. One man required to operate at rate of 60 to 90 feet per hour. One stroke of lever moves pipe one inch. Every 22 in-

7.00

4.00

ches frame changes grip without moving machine. Approximate weight, 140 pounds.
Price, for ½ to 2-inch Pipe.....

e, for ½ to 2-inch Pipe.....each \$70.00

Little Wonder Pipe Leads

Shown in illustration. A tool steel lead to fit into end pipe, insuring accuracy of direction.



Reed Combination Pipe Vises

Swivel Base

Designed for severe service requirements Pipe jaws are milled from solid tool steel bars, tempered in oil. Front pipe jaw is re-

No. 31 32 33	Holds Pipe, In. 1/8 to 21/2 1/8 " 31/2 1/8 " 41/2 1/8 " 6	Width Jaw. In. 31/2 41/4 5	Weight Pounds 46 72 119 178	Price Each \$16.00 22.00 32.00 45.00	Price Jaws (3) per Set \$2.40 3.40 5.60
	, 0	0	T10	45.00	8.00

Reed Standard Pipe Vises

Self-locking. Pipe jaws are of fine tool steel, carefully hardened and tempered in oil. Both upper and lower pipe jaws have two holding bolts.

There is no front apron, hence vise may be mounted on any plane surface. Base extension at back is flat on top to make it easy to get at bolt heads.

No.	Holds Pipe Inches	Wt.	Price Each	Price Jaws (3) per Set
7000	1/8 to 11/4	3	\$2.50	\$1.20
700 70	1/8 " 11/2	$\frac{5}{7\frac{1}{2}}$	3.60 4.25	1.50
71	1/8 " 21/2	10	5.00	1.80
72 73	3 3 44 45 3	16	7.50	2.55
13	78 4/2	25	11.00	3.60



Trimo Pipe Vises





Tool steel jaws, hardened and tempered. Yoke, frame and base of malleable iron. Screw, head and handle of selected steel. No. 40B is made with apron and is portable.

No.	400	40	41	42	40B	43	44
Capacity in.	1-13	$\frac{1}{8} - 2$	1-21	$\frac{1}{8} - 3\frac{1}{2}$	$\frac{1}{8} - 2$	1-41	$\frac{1}{8}$ - 6
Yokeea.		\$1.00	\$1.20		\$1.00	\$2.65	
Base	1.40	1.60	1.90	2.80			\$5.75
Hook					2.65	4.20	9.00
M. C. III II	.25	.30	.35	.50	.30	.75	1.60
Top Screw and Handle "	1.00	1.20	1.40	2.20	1.20	3.00	6.60
Lower Jaw "	.50	.60	.70	.85	.60	1.20	
Upper " "	.50	.60	.70				2.00
Yoke Bolt and Nut. "				.85	.60	1.20	2.00
U I D to	.10	.10	.10	.10	.10	.10	.10
Upper Jaw Bolt and Nut. "	.10	.10	.10	.10	.10	.10	.10
Lower " " " " "	.10	.10	.10	.10	.10		
Jaw Clamps "	.25					.10	.10
Hools Din		.25	.30	.45	.25	.65	1.20
Hook Pin	.10	.10	.10	.10	.10	.10	.10
Base Screw Handle						***	*10
and Clampea.							
Vise Complete"	2 00	4 00	T 00	411			
vioc Complete	3.60	4.25	5.00	7.50	5.00	11.00	23.50

Martin Portable Vise Stand and Pipe Bender



Small Size, with Chain Vise



Large Size, with Hinged Pipe Vise and Rear Support

This apparatus is designed for use wherever pipe must be cut, threaded or bent. It can be picked up at any time and moved from place to place. There are no bolts, screws or braces to remove. It does not have to be fastened to the floor, walls or ceiling. It will not tilt, upset or skid.

It is convenient for cutting and threading pipe. For these operations, the pipe is fastened in the vise and rests in the bending attachment which keeps it rigid and in line.

Small Size

Equipped with a special device which will bend pipe from 1/8 to 3/4-inch diameter easily without kinking. Capacity, with chain vise, 2-inch pipe; with hinged vise, 21/2-inch pipe. Weight complete, with hinged vise, 54 pounds; with chain vise, 50 pounds. Rear support not supplied.

Cat. No.	Description	Price Each						
1A	Complete with Hinged Vise	\$39.00						
1 B	Stand with Hinged Vise, Less Legs	35.00						
*1C	" Legs, Less Vise	31.00						
*1D	Less " "	27.00						
1E	Complete with Chain Vise	39.00						
1F	Stand with Chain Vise, Less Legs	35.00						
†1G	Legs, Less Vise	31.00						
†1H	" Less " " "	27.00						
	Large Size							

Capacity with chain vise, 4 inches; with hinged vise, 4½ inches. Bender capacity, one inch. Weight complete, with hinged vise, 175 pounds; with chain vise, 159 pounds.

Cat.	•	D 1
No.	Description	Price Each
2A	Complete with Hinged Vise	
*2B	Stand with Legs and Rear Support Less Vise	75.00
2 C	" Hinged Vise, Less Rear Support	71.00
2D	Mand with Hingad Visa, Less Less and Rear Support	65.00
*2E	" " Legs, Less Vise and Rear Support	56.00
*2F	"Only, Less Vise Legs " " "	50.00
2 G	Complete with Chain Vise	90.00
†2H	Stand with Legs and Rear Support, Less Vise "Chain Vise, Less Rear Support	75.00
2K	Chain Vise, Less Rear Support.	71.00
2L	Stand with Chain Vise, Less Legs and Rear Support	65.00
2M	" Legs, Less Vise and Rear Support	56.00
†2N	Omy, Less vise, Legs and Rear Support.	50.00
"Dr	illed for hinged vise. †Drilled for chain vise.	

Nye Vise Stands with Pipe Bender



Equipped with or without Nye Vises. Frame a one piece malleable casting. No parts to jar loose or get lost. Can be drilled for any size vise specified. Bender can be used with open side vise or bench vise. Standard equipment includes four legs—two with malleable feet drilled for lag screws, two with pointed ends well spread out for firm foundation. Can be shipped without legs to save freight charges, if desired.

Penn Portable Pipe Vise and Bender Posts



With Vulcan Chain Pipe Vise and Bender

	With Vulcan	Chain Fipe	vise and bend	zer
No.	Capacity Vise Pipe, In	Bender Holding Pipe, In.	Shipping Weight Pounds	Price Each
*1 *2	1/8 to 2 1/8 " 4	114	30 60	\$17.00 22.50
	With Ree	d Pipe Vise	and Bender	
1 2	½ to 2 ½ " 3½	$1\frac{3}{4}$	30 60	\$17.00 22.50

*No. 1 is equipped with No. 1 Vulcan chain pipe vise; No. 2 with No. 2 Vulcan chain pipe vise.

Trimo Pipe Wrenches



Wood Handle Made with wood handle in sizes 6, 8, 10 and 14-inch.

W.17-00.0E	O TILDER TIOOGS	AACEAE COLC 202	Dado O	of To mitte TI II	CALL
Length	Takes	Price	Length	Takes	Price
Open, In.	Pipe, In.	Each	Open, In.	Pipe, In.	Each
6	1/8 to 1/2	\$2.00	18	1/4 to 2	\$5.00
8	1/8 " 3/4	2.25	24	1/4 " 21/2	7.25
10	1/8 " 1	2.50	36	1/2 " 31/2	13.50
14	1/4 " 11/2	3.50	48	1 " 5	20.00
		Evera	Parte		

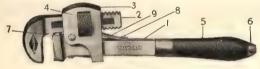






PRICE, EACH————————————————————————————————————										
For	Move-	1			. xisomy as			W	ood Han-	
	nch able		Insert			Frame	Jaw		dles with	Guarda
In.	Jaws	Nuts	Jaws	Frames	Springs	Pins	Pius	Handles	Ferrule	per Pr.
6	\$.75	\$.12	\$.35	\$.40	\$.03	\$.03	\$.03	\$.95	\$.16	\$.15
-8	.80	. 15	.40	.45	.03	.03	.03	1.00	.16	.15
10	.85	. 20	. 50	. 55	.03	.04	.04	1.10	. 18	.20
14	1.15	.30	. 60	.70	.03	.04	.04	1.50	.25	.30
18	1.75	.35	.70	.95	.04	.04	.04	2.25		.35
24	2.25	. 55	. 80	1.40	.04	.04	.04	3.50		.45
36	4.35	1.10	1.10	2.20	.04	.05	.05	7.00		. 55
48	7.50	1.50	2.00	2.70	.04	.05	.05	10.50		. 65

Genuine Walworth Stillson Wrenches



Wood Handle



Steel Handle

Sizes 6 to 14-inch are furnished with wood handle; 10-inch and larger, steel handle unless otherwise specified.

Length Open Inches	Takes Pipe Inches	Price Each	Length Open Inches	Takes Pipe Inches	Price Each
6	1/8 to 1/2	\$2.00	18	14 to 2	\$5.00
8	1/8 " 3/4	2.25	24	14 " 2½	7.25
10	1/8 " 1	2.50	36	14 " 3½	13.50
14	1/4 " 11/2	3.50	48	1 " 5	20.00

Extra Parts

	PRICE, EACE								
1			4		-				
For Bars Wrench with Inches Springs	2 Jaws	3 Frames	Ad- justing Nuts	Wood Handles	End Nuts	Frame Pins	Spring Rivets	9 Springs	
6 \$.95	\$.75	\$.38	\$.12	\$.16	\$.15	\$.03	\$.01	\$.10	
8 1.00	.80	.42	.15	.16	.15	.03	.01	.10	
10 1.10	. 85	.50	.20	.18	.20	.04	.02	.10	
14 1.50	1.15	.60	.30	.25	.20	.04	.02	.10	
18 2.25	1.75	.75	.35			.04	.02	.10	
24 3.50	2.25	.95	.55			.04	.02	.11	
36 7.00	4.35	1.70	1.10			.05	.02	.13	
48 10.50	7.50	2.20	1.50		• • • •	.05	.02	.13	

Little Giant Pipe Wrenches



Made of only 3 parts. No springs or frame to break. Convenient in confined places, has an increased swing due to end opening jaws. Drop forged and heat treated throughout. All sizes packed 6 in a bex.

Size	For	WED	OHT		- Price, 1	EACH -	
In.	Pipe, In.	Lbs.	Os.	Complete	Handle	Jaw	Nut
8	3/4		14	\$2.25	\$1.50	\$.80	\$.25
10	1	1	7	2.50	1.75	.85	.30
14	11/2	2	14	3.50	2.50	1.15	.45
18	2	4	8	5.00	3.50	1.75	.50
24	$2\frac{1}{2}$	7	15	7.25	5.00	2.25	.75

Larco All Steel Monkey Wrenches

Has unbreakable steel frame, with handles and jaws of forging steel. 10 Size..... .inches Opens. Price, Wrench Complete . . . \$2.25 2.50 3.50 5.00 .each Parts ...inches 10 18 Price, Movable Hook Jaw . . . each \$.80 \$.85 \$1.15 \$1.75 Inserted Jaw..... Knurled Thumb Screws .50 .60 .70 .80 .10 Adjusting Nuts..... .20 .30 .40 .50 Springs.... .10 .10 .10 .64 .70 Frames..... .56 .80 Bridges. Frame Pin (Rivet).... . 10 .10 .10 .10 .04 .04 .03 .04

Coes Knife-Handle Wrenches

1.00

1.10



Handles.....

The handle is a cast semisteel frame with hardwood handles.

1.40

2.10

Length . . . inches 15 18 21 215/2 31/8 Opens..inches Price . . . per doz. \$15.00 18.00 22.00 28.00 38.00 48.00 58.00

Reed Strap Wrenches



For screwing up all kinds of nickel-plated and polished

when worn the straps can be changed end for end, thus prolonging the life of the wrench. The change from one position to the other may be made by simply altering the position of the strap in the slots in head without loosening any screws.

-	Length	Takes Pipe	Price Complete	Extra Straps
No.	Inches	Inches	Each	Each
12	12	1/8 to 2	\$1.50	\$.40
18	18	1 " 5	3.00	1.00

Nye Union Valve-Nipple Wrenches



Made so that when inserted in a radiator union valve it catches the nipple at the base,

thus avoiding mashing them. Takes sizes 1/2 to 2-inch inclusive. Price.....each \$1.50

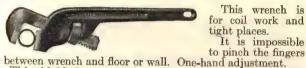
New Ridgid Pipe Wrenches



Jaws are of the best tool steel. Jaw-housing and I-beam handle are one solid construction of certified malleable iron. Adjusting nut rides free in an open housing. allows one a full finger and thumb grip on the nut, making possible a much easier and quicker adjustment.

Size Inches	Price Each	Size Inches	Price Each
6	\$2.00	18	\$5.00
8	2.25	24	7.25
10	2.50	36	13.50
14	3.50	48	20.00

Ridgid End Pipe Wrenches



This wrench is for coil work and tight places.
It is impossible

This ridgid pipe wrench is clean-cut. Has only 3 working parts. The jaws are made of best tool steel, hardened by the most improved methods. The jaw housing and I beam handle is one solid construction of certified malleable. This design embodies strength and eliminates breaking of housings or saddles and handles.

Size Inches	Wt., Lbs. per Box of 6	Price Each	Size Inches	Wt., Lbs. per Box of 6	Price Each
E 6	$2\frac{3}{4}$	\$2.00	E18	33	\$5.00
E 8	$5\frac{1}{2}$	2.25	E24	50	7.25
E10	11	2.50	E36	15 Each	13.50
E14	20	3.50			

Williams' Improved Vulcan Drop-Forged Chain Pipe Wrenches With Flat Link Chain

*Wrenches for pipe sizes larger than 12 inches are supplied only in the nonreversible jaw pattern. Price, Com Price, Extra plete, Each Chains, Each Jaws, per Pr. \$5.00 \$1.50 \$2.00 Takes Leth. Wt. No. 30 31 Pipe, In. 133/4 13/4 20 53/4 7.00 2.00 3.50 32 27 3.00 10.00 10 5.50 33 37 16 14.00 5.00 8.00 331/2 441/2 24 18.00 7.00 9.50 34 35 501/2 11/2 8 31 22.00 9.00 11.00 2 44 12 641/2 50 36.00 15.00 15.00 *151/2 16 85 98 60.00 30.00 24.00 *16 18 87 137 80.00 40.00 32.00

Walworth Reversible Bostongs



The cam action insures a positive grip and instant release when the pressure on handle is relieved. Pipe may be turned in either direction without removing the tong from the pipe, unhooking chain from the jaw, or shifting the jaws on the pipe. Handle and jaws are made of drop-forged carbon steel teeth carefully tempered, strong flat link chain. Special length of chain to order.

Size No.	Takes Pipe Inches	Length Inches	Length Chain Inches	Weight Pounds	Price, Each Complete
2	½ to 2	23	$11\frac{1}{2}$	$6\frac{1}{2}$	\$6.00
4 6	3/4 " 4	36	$17\frac{1}{2}$	151/4	8.50
8	11/2 " 8	45 50	$24\frac{3}{8}$ $29\frac{3}{4}$	$\frac{25\frac{1}{2}}{36}$	12.00 18.00
12	2 " 12	64	451/8	63	26.00

Mueller Pipe End Reamers



Pipe cutters leave a burr which reduces pipe area.

The ends must be reamed after cutting if the full carrying capacity

is to be retained.
The ratchet is so constructed that the strain is divided into half

a dozen bearings, greatly increasing the durability of the tool.

Price, Small Ratchet Pattern, Reams Pipe 3/8 to 11/4	
Incheseach Price, Large Ratchet Pattern, Reams Pipe 3% to 3	\$5.00
Incheseach	7.50

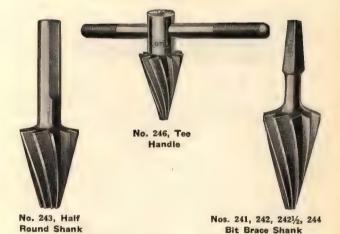
Pipe Taps



Briggs standard right hand taper threads are furnished unless otherwise specified.

Pipe Size	No. of Briggs Std. Thread	Length Thread	Length Over All	PRICE,	EACH—High Speed
Inches	to Inch	Inches	Inches	Steel	Steel
1/8	27	3/4	$2\frac{1}{8}$	\$1.00	\$1.10
1/4	18	11/6	276	1.20	1.50
3/8	18	1 1/16	29/16	1.60	1.95
1/2	14	$1\frac{3}{8}$	31/8	2.00	3.10
3/4	14	$1\frac{3}{8}$	31/4	2.80	4.40
1	$11\frac{1}{2}$	$1\frac{3}{4}$	33/4	4.40	7.80
$1\frac{1}{4}$	$11\frac{1}{2}$	$1\frac{3}{4}$	4	5.00	12.10
$1\frac{1}{2}$	$11\frac{1}{2}$	$1\frac{3}{4}$	$4\frac{1}{4}$	6.60	16.60
2	$11\frac{1}{2}$	$1\frac{3}{4}$	$4\frac{1}{2}$	10.00	27.25

G T D Spiral Fluted Burring Reamers



Made of high grade steel and designed for removing burrs caused by cutting pipe, and also for counter-sinking,

Ground to adapt them for use in a variety of materials. Spiral flute reduces chattering.

No.	Style of Shank	Capacity Pipe Inches	Price Each	Price per Doz.
241	Bit Brace	1/8 to 1/2	\$1.00	\$12.00
242	Bit Brace	1/8 to 1	1.25	15.00
2421/2	Bit Brace	1/4 to 11/4	1.50	18.00
243	½ Round	1/4 to 11/4	1.50	18.00
244	Bit Brace	1/4 to 2	3.00	36.00
246	T Handle	1/4 to 2	4.00	48.00

Improved Combination Shell Drills Complete Sets



	COMPANY AND NOOR	COMPLET		DUCTE ITT DOG	Comprese
	I. P. Size	Set		I. P. Size	Set
Set	Inches	Price, Each	Set	Inches	Price, Each
В	3/8, 1/2	\$6.70	\mathbf{F}	3/8 to 11/2	\$22.40
C	3/8 to 3/4	9.40	G	3/8 " 2	29.40
D	3/8 " 1	12.90	\mathbf{H}	3/8 " 21/2	39.40
E	3/8 " 11/4	17.40		3/8 " 3	51.40

Stems and Center Drills



Price, Stem with					
Inches				ea	ch \$1.60
Price, 14-inch Th	readed Cente	r Drills	for Sten	as., "	
" ¼-inch Cer	nter Guides				.20

Shells



		Shell			Shell			Shell
I. P.		Only	I. I		Only	I. P.		Only
Size	0. D	Price	Size	e O. D.	Price	Size	O. D.	Price
In.	ln.	Each	In	In.	Each	In.	In.	Each
3/8	3/4	\$2.40	1	$1\frac{3}{8}$	\$3.50	2	276	\$7.00
1/2	3/4 15/6	2.50	11	4 11/8	4.50	21/2	215/18	10.00
3/8 1/2 3/4	11/8	2.70	11		5.00	. 3	35/8	12.00

4-Point Star Drills

For Brick and Concrete



The 4-Point Star Drill is made of a high grade tool steel, hand forged and tempered, and fully guaranteed to give satisfaction to every user.

a	Ship. Wt.				
Cutting Diameter	12-In. Length		70.	70	
of Drill	per Doz.			ER DOZEN	
Inches	Lbs.	8	12	18	24
1/4	$2\frac{1}{2}$	\$8.25	\$8.50	\$11.00	\$13.50
5/16	$2\frac{1}{2}$	8.25	8.50	11.00	13.50
5/16 3/8	$3\frac{1}{2}$	8.25	8.50	11.00	13.50
					10.00
7/16	$3\frac{1}{2}$	8.70	9.00	11.50	14.00
1/2	5	9.65	10.00	12.50	15.00
9/16	6	11.65	12.00	15.00	17.50
5/	7	11 05	10.00		
78		11.65	12.00	15.00	17.50
5/8 3/4 7/8	11	13.70	14.00	17.50	20.00
1/8	14	15.30	16.00	20.00	22.50
1	191/2		18.00	22.50	25.00
11/8	26		24.00	28.00	32.00
11/4	28		30.00		
	20		30.00	35.00	40.00
13/8	31		40.00	45.00	50.00
11/2	37		50.00	56.00	62.00
15/8	39		60.00	66.00	72.00
				55.00	.2.00
13/4	39		75.00	81.00	87.00
17/8	39		90.00		104.00
2	48				
13/4 17/8 2	39			81.00 97.00 112.00	

No. 5 Threadwell Hack Saw Frames

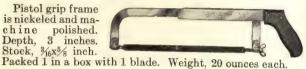


Heavily nickelplated over copper. Depth, 3¼ inches. Stock, ¾6x¾ inch. Packed I in a box with 1 each fine,

medium and coarse blades. Weight, 32 ounces each. Price, No. 5, 8 to 12-Inch Capacity......per dozen \$24.00

No. 4 Threadwell Hack Saw Frames

Pistol grip frame is nickeled and machine polished. Depth, 3 inches. Stock, \%6x5\% inch.



Price, No. 4, 8 to 12-Inch Capacity...... per dozen \$8.00

No. 2 Threadwell Hack Saw Frames



All parts are nickel-plated and frame machine polished. Depth, 23/4 inches. Stock,

3/6x5/8 inch. Packed 1 in a box with 1 blade. Weight, 16 ounces each.

Price, No. 2, 8 to 12-Inch Capacity..... per dozen \$5.50

Quality Hand Hack Saw Blades



Made in two sizes: No. 1, all-hard; No. 2, flexible, especially recommended for electricians, plumbers, steam fitters, etc.
Unless otherwise specified, all-hard blades furnished. When
length only is given in hand blades, 18 teeth per inch furnished.

		—_Т	EETH P	ER INCH, 1	FOR CUTTI	NG	
		Regular		Tool	Drill T	hin Tubing	
		Stock	Soft	Steel	Rod	Elect.	
		Blade for	Steel	Light	Iron	Casing	
		General	and	Angles	Pipe,and	and Thin	Price
Lgth. Width		All Round		Brass and	Sheet	Sheet	per
In. Inches	Gauge	Work	Iron	Copper	Metals	Metals	Gross
8 1/2	.025 or 2	3 18	14	18	24	*32	\$8.00
9 1/2	.025 " 2	3 18	14	18	24	*32	9.00
10 1/2	.025 " 2	3 18	14	18	24	*32	10.00
$ \begin{array}{cccc} 10 & \frac{1}{2} \\ 12 & \frac{1}{2} \end{array} $.025 " 2	3 18	14	18	24	*32	12.00
*No. 2, only.							

Excelso Rotary Hack Saw Tools



Rapidly and easily cuts holes through metal to fit pipe size taps. One tool cuts holes for either 1, 1½ or 2-inch pipe taps by inserting proper size blades. Cuts labor cost 75 per cent for making holes through metal or other material. Its operation is simple, being used in an ordinary hand brace. Price, Including 6 Blades, 2 of Each Size.....each \$7.50

....each Extra Blades.... Blades, 11/4-inch, can be supplied at an extra cost.

Engineers' Favorite Flue Cleaners



O. D. Tube In.	Price Each	O. D. Tube In.	Price Each
$\frac{11/2}{13/4}$	\$2.00 2.00	3 3 ¹ / ₄	\$3.00 3.25
2 2 1/4	2.00 2.25	$\frac{31/2}{33/4}$	3.50 3.75
$2\frac{1}{2}$ $2\frac{3}{4}$	2.50 2.75	4	4.00

Chesterton's Elliptical Flue Cleaners



Has steel cutting arms that thoroughly remove all scale and soot. Sizes less than 2inch take 2-inch price.

Price, Sizes 11/4 to 6 Inches.....per inch \$1.00

Pilley's Combination Flue Brushes and Scrapers

Fits all sizes tubes from 2 to 6 inches.



Price.....per diameter inch \$1.00

No. 1953 Wire Flue Brushes

Round Steel

Round steel wire double spiral flue brushes for 2 to 6-inch flues.

Price, No. 1953, 1 to 6-inch....per inch \$1.00



No. 1955 Wire Flue Brushes



Flat Steel

Flat steel wire flue brush for cleaning 2 to 6-inch boiler tube.

Price, No. 1955, 2 to 6-inchper inch \$.90

No. 1950 Wire Flue Brushes



Flat Steel

Flat steel wire single spiral flue brushes for 1 to 6-inch flues.

Price, No. 1950, 1 to 2-inch.....each \$2.00 Price, No. 1950, 2 to 6-inch....per inch 1.00

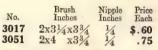
Spiral Flat Wire Flue Brushes



Price, All Sizes 1 to 6-Inchper inch \$.50

Boiler and Heater Brushes

Flat Wire





Boiler and Heater Brushes

Rectangular

No.	Brush	Nipple	Price
	In.	In.	Each
1900	$\begin{array}{ccc} 1\frac{5}{8}x4 & x4\frac{1}{2} \\ 2\frac{1}{2}x6 & x4\frac{1}{2} \\ 3\frac{1}{4}x6\frac{5}{8}x4\frac{1}{2} \end{array}$	$\frac{1}{4}$ x $2\frac{1}{2}$	\$1.00
1901		$\frac{1}{4}$ x $2\frac{1}{2}$	1.50
1902		$\frac{1}{4}$ x $2\frac{7}{4}$	2.00

No. 1903 Boiler and Heater Brushes



Flat

Size of brush, 134x4x51/2 inches; nipple, 14x21/2 inches.

Price, No. 1903 .. each \$1.50

Boiler and Heater Brushes

Square



456

2

	Brush	Nipple	Pric
No.	In.	In.	Eaci
1915	$2x4x4\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	\$1.4
1916	$3x5x4\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	1.7

Boiler and Heater Brushes

Oval

	Brush	Nipple	Price
No.	In.	In.	Each
1910	2x4x41/2	$\frac{1}{4}$ x2 $\frac{1}{2}$	\$1,20
1911	$3x5x4\frac{1}{2}$	$\frac{1}{4}$ x2 $\frac{1}{2}$	1.50



No. 1928 Boiler and Heater Brushes



No. Description Price, Each
1928 Square, 3½x5 In., 1-in. Wires, ½x4 Nipple \$1.50

No. 451 Radiator Brushes



Has plain handle. Brush part of black hair, 1 row; length stock, 2 inches; brush part, 9 in.; over all, 24 in.

Price, No. 451.....each

Wood Handle Radiator Brushes



9

36

,84

No. 3 Wiedeke Standard Roller Tube Expanders For Hand Use



This expander, for hand use only, is designed for those naving only an occasional use for an expander. The mandrel and rolls are made of tool steel and hardened. The frame and rear collar is one piece furnishing a substantial bearing at all times for the guard, which can be removed if necessary. No separate collar or locking pin required, these generally becoming loose from service and throwing expander out of commission.

Tables show smallest inside diameter any expander passes into and what it will expand to, enabling one to select an

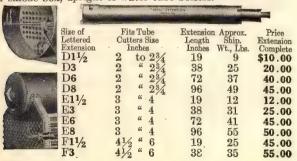
expander with proper range.

Size of	Enters I.D.				
Expander	Tubes and	Approx.	·	PRICE, EACH-	
for O.D.	Expands to	Ship.	Expander	Extra	Extra
Tubes, In.	Inches	Wt., Lbs.	Complete	Mandrels	Rolls
1	$\frac{27}{32}$ to 1	21/2	\$10.00	\$2.00	\$.20
11/4	11/6 " 11/4	23/4	10.00	2.00	.20
11/2	19/82 " 11/2	3	10.00	2.00	.20
13/4	11/2 " 13/4	41/4	10.00	2.00	.20
2	123/32 " 2	5	10.00	2.00	.20
21/4	115/6 " 21/4	6	12.00	2.00	.20
21/2	25/32 " 21/2	71/2	14.00	2.50	.20
23/4	213/2 " 23/4	81/2	16.00	3.25	.35
3	25/8 " 3	$10\frac{1}{2}$	18.00	3.75	.35
31/4	27/8 " 31/4	14	20.00	4.25	.50
31/2	31/8 " 31/2	17	23.00	4.75	. 50
33/4	33/8 " 33/4	171/2	25.00	5.50	. 60
4	39/18 " 4	$20\frac{1}{2}$	30.00	5.75	. 60
41/4	313/6 " 41/4	$24\frac{1}{2}$	40.00	6.50	80
41/2	41/6 " 41/2	25	50.00	8.50	.80
5	41/2 " 5	341/2	60.00	10.00	1.00
6	53% " 6	$49\frac{1}{2}$	70.00	11.00	1.75

No. 375 Wiedeke Ideal Self-Feed Tube



Connect proper length extension to tube cutter No. 375 for smoke box, upright or water tube boilers.

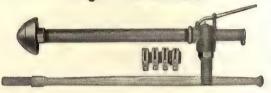


Sanitary or Toilet Brushes



Price, No. 476, White Fibre, 22 Inches Long....each \$.42

Magic Flue Blowers



Stuffing box in the valve eliminates possibility of steam escaping under the lever.

Price is for blower with wood handle, clamps and nipple

only—hose extra.

No.	Hose Connection Inches	O.D. Tubes Inches	Price Each	No.	Hose Connection Inches	O.D. Tubes Inches	Price Each
1	1/2	$2 -2\frac{1}{4}$	\$6.00	4	1	31/2-33/4	\$10.50
2	3/4	$2\frac{1}{2} - 2\frac{3}{4}$	7.50	5	11/4	$4 -4\frac{1}{2}$	12.00
3	1	$3 -3\frac{1}{4}$	9.00	6	11/2	5 -6	15.00

Vulcan Trench Braces



This brace or jack is exceedingly strong, being made of high grade steel and iron throughout.

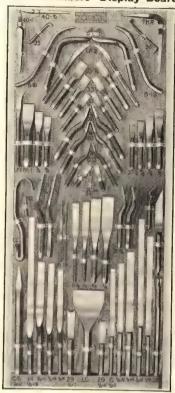
The ball and socket joints forming the ends will immediately assume the angle of the planking when put in position and take a firm bearing; thus preventing caving.

This brace is adapted to any width of ditch by merely changing the length of tubing, which is standard gas pipe.

It can be extended to about one-half of the length of the threaded screw.

Diam. Pipe and Screw 11/2 11/2 11/2 11/2	Length Brace Closed 16 18 21 24	Length of Screw 11 12 14 14	Safe Extension of Screw 6 7 8	Approx. Weight per Dozen Pounds 210 219 238 249	Price per Dozen \$23.00 23.00 24.00 24.00
$1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$	27	16	9	270	26.00
	30	16	9	277	26.00
	36	18	10	303	27.00
	42	18	10	312	28.00
1½	48	18	10	325	29.00
2	36	18	10	542	51.00
2	42	18	10	564	52.00
2	48	18	10	586	53.00
2 2	54	18	10	608	54.00
	60	18	10	574	55.00

Plomb Hand-Forged Tools No. 3 Plumbers' Display Board



No.	One Each of the Following:	Price
40	1/2-Inch Brace Reamer.	Each
40	1 =Inch brace beamer	\$.75
THR		1.50
35	24-IHUH UHSEL SCIEW Driver	.40
36	24-IHCH AUGU SCIEW Driver	.50
BI-8		.40
BI-9 RL	%XIU-Inch Benning Iron	.50
LP-2		1.50
33	Pair 1/2x9-Inch Lead Picking Tools. Pair 34-Inch Long Calkers.	1.20
33	Pair %-Inch Long Calkers.	1.20
33		1.00
033		.80 1.40
033	Fair %-Inch Ullset Long Calkord	1.20
033	Fall 22-Inch Ollsel Long Calkors	1.00
21		.60
34		.35
LP-1 86		.60
86	1 -Inch Cold Chisel	.90
86	%-Inch Colo Chisel	.55
37	%-Inch Cold Chisel.	.40
37	24-Inch Soil Pipe Chisel 64-Inch Soil Pipe Chisel	.40
37	%-Inch Soil Pipe Chisel	. 50
37	78-Inch Soil Pipe Chisel.	. 65
CC	%x12-Inch Ceiling Calker.	.90
22	28"IUCH CIAS FILLERS CAIKER	1.50
131	%-IRCH LONG Gasket Calker	.25
131	%-Inch Long Gasket Calker	.70
18	%X/-IBCE SO. Scratch Awl	.40
19	26X7-IBCH UCE SCRAECH AWI	.25
31 31	%-Inch Short Gasket Calker	.60
20		. 80
4	%-Inch Elbow Calker. %-Inch Elbow Calker. %x10-Inch Plugging Chisel, ¼-in. Pt. %xx(x10-Inch Floor Chisel. 4x	. 40
5	%x5/x10-Inch Floor Chical, 1/4-in. Pt.	. 75
5	1/2 x 3/2 x 10-1nch Floor Chisel.	. 60
5	58x1 x10-Inch Floor Chisel.	. 80
5	34x1 %x10-Inch Floor Chisel.	1.00
CG	%x12-1nch Concrete Gad	1.20
14		1.10
14	%XI4-Inch Offset Yarner	1.20
14		.90
14	29All 29-Inch Umset Varner	.80
29		. 80
LC 29	Lead Chirer	2.35
6	1/m111/ Imply Construction	. 60
6	72A11 72-Inch Spring Yarner	. 80
6	Janes - Inch Spring Larner	. 90
6	Savia Inch Chains Vone	1.20
6	16v18 -Inch Spring Varnor	1.20
13	%x12-Inch Star Drill	1.10
	Plomb Tools are made from carefully selected	. 95
and or	band formed and Grief al	steel
and at	e hard forged and finished.	

Screwdrivers



Ratchet Braces



Expansive Bits



No. 172 171	Cuts Inches 58 to 2 78 " 3	Price per Doz. \$22.00 26.00
	78	20.00

Levels



Price, 2-foot Levels.....each \$2.50

No. 651 Four-fold Rules



Lengt	h	feet	2
Price.	Plain	ner dozen	\$3.00
66	Brass Bound		11.40

No. 400 Measuring Tapes



Length	 	feet 25	50
Price	 per	dozen \$6.60	9.00



Price.....each \$.50

No. 164 Oval Shave Hooks



No. 142 Lead Pipe Expanding Pliers



No. 7 Bending Springs

Price, No. 5.....each \$.70

No. 195 Turn Pins No. 85 Drift Plugs

Price, Size 1, 2 and 3

..... each \$.50

Price, 1, 11/4, 11/2 and

2-inch each \$.45

No. 84 Dressers

 Price, Dogwood.
 each \$1.25

 Boxwood.
 " 1.40

 Lignum-vitae.
 " 1.60

No. 15 Bossing Sticks



 Style......
 Dogwood Boxwood Lignum-vitae

 Price, No. 15. each
 \$.50
 .75
 1.25

No. 114 Plumbers Mallets



Made from dogwood. Size 3x6 inches.

Price, No. 114.....each \$.46

No. 220 Wing Dividers



No. 83 Plain Compasses



 Size..... inches
 5-6
 8
 Size......inches
 6

 Price.....each
 \$1.00
 1.75
 Price......each
 \$1.00

No. 22 Candle Holders



Shank made of steel and holder of brass.

Price, No. 22each \$.25
No. 20 Nye Wiping Cloths

 16-ply Dry Herringbone Ticking

 Size ...inches
 2x2
 2½x2½
 2x3
 2½x3

 Price ...per doz.
 \$4.40
 4.40
 4.40
 4.40

 Size ...inches
 3x3
 3½x3½
 4x4

 Price ...per doz.
 \$4.40
 5.00
 5.35

For 8-ply dry genuine English moleskin add to prices as follows: 4x4-inch, \$2.15: other sizes, \$2.00.

Ingot Lead Moulds

Bar Solder Moulds





Price, 2 Bar ... each \$2.30 2.40 Price ... each \$4.50

Pig Lead Moulds



No. 111 Ladles



 Size
 inches
 2½
 3
 3½
 4
 5
 6

 Capacity Lead
 ..lbs
 1
 2
 3
 4
 8½
 18

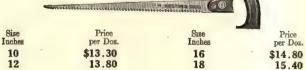
 Price
 ..each
 \$.38
 .45
 .53
 .60
 .75
 .90

No. 135 Solder Pots



Size....inches 4 5 6 7 8 9 10 12 Price....each \$.75 .90 1.15 1.50 1.90 2.25 3.00 5.25

No. 2 Compass Saws



. .

. . . .

14.20

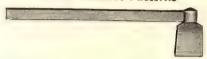
14

Soldering Coppers Pointed Pattern

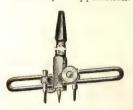


Furnished in 1, 1½, 2, 2½, 3, 4, 5, 6, 7, 8, 10 and 12 pounds to the pair. When ordering state weight. Prices upon application.

Soldering Coppers Swivel Hatchet Patterns



Weight, per pair.pounds 3 4 5 6 Prices upon application.



No. 441 Washer Cutters

For cutting washers of leather, fiber, cloth or thin sheet metal. Blades are adjustable and easily removable. Is equipped with offset blade with which it is possible to cut washers of all sizes from ½ to 5½ inches.
Price, No. 441.....each \$2.90
Extra Blades..per set .60

Regular Soil Pipe Test Plugs



stand	ard or	eriect	joint heavy	on soil
pipe. Size In.	Price Each	Size In.		rice lach

In.	Each	In.	Each
2	\$1.40	6	\$3.40
3	1.80	8	5.90
4	2.50	10	10.00
5	2.90	12	21.50

Bit Stock Drills For Metal or Wood Carbon Steel



Size of shank, 3/6x3/8x11/4 inches.

D:	Light.	Lgtn.			Lgth.	Lgth.	
Diam.	Over All	Twist	Price	Diam.	Over All	Twist	Price
In.	In.	In.	Each	In.	In.	In.	
1/16	31/8	11/		88.4			Each
716		1 /16	\$.21	5/16	$5\frac{3}{4}$	35/8	\$.59
3/32	$3\frac{1}{2}$	156	.23	11%-	57/		
1/-	977	1 7 /		7/32	0/8	31/16	.67
78	0/8	1/8	.25	3/2	6	$3\frac{3}{4}$.71
5/32	41/4	21/4	.30	134	01/		
3/2	407			732	0/4	4	. 78
7/16	4 16	$2\frac{9}{8}$.34	7/10	61/2	43/	.88
7/32	47/6	213/	.38	157	019 7	1 710	
194	260	2 10		7/32	0%	4 /18	.98
4/4	D %18	$3\frac{1}{16}$.42	1/2	7	15%	1.09
9/20	516	33%		12		4%	1.09
7/32	072	078	.50				

Straight Shank Twist Drills

Carbon Steel

High Speed Steel



		Danas	T7			_	
	Length	FRICE	EACH High		T . (1	Pric	EACH
Diam	Over All	Carbon	Speed	Diam.	Length Over All	Carbon	High
In.	In.	Steel	Steel	In.	In.	Steel	Speed Steel
1/16	3	\$.45	\$.90	15/			
3/32	41/			716	$6\frac{3}{8}$	\$.70	\$1.30
	E1/4	.45	.90	1/32	6/2	.75	1.40
1/8	$\frac{51}{8}$.45	.90	3/8	$6\frac{3}{4}$.80	1.50
3/32	$5\frac{3}{8}$.45	. 90	13/32	7	.90	1.65
3/16	$5\frac{3}{4}$.50	.90	7/16	71/	1.00	1.75
7/32	6	.55	1.00	15/20	712	1.10	1.90
1/4	61/6	.60	1.10	1/32	73%		
9/20	61%	.65	1.20	7/2	174	1.20	2.00
132	0/4	. 00	1.20				

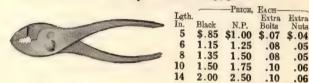
Forged Steel Tinners' Snips

No. 1819 Regular Pattern



	Length			Length	
Length	Over	Price	Length	Over	Price
of Cut	All	per	of Cut	All	
Inches	Inches	Pair	Inches	Inches	per Pair
$4^{1/2}$	17	\$4.50	21/2	11	\$1.60
41/4	153/4	3.00	21/4	$10\frac{1}{4}$	1.20
3 1/8	141/4	2.50	2	81/2	1.00
$3\frac{1}{2}$	$13\frac{1}{2}$	2.00	13/4	8	.90
3	12	1.75			

Model M Billings Dependable Combination Slip Joint Pliers



No. 326 Burner Pliers

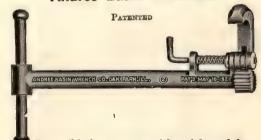
Drop forged tool steel. Knurled handles. Polished. Strong and well made.

Length inches	5	6
Weight, per Dozenpounds Price, No. 326per dozen	3	43/
Price No 326	ec 00	4 ³ / ₄ 9,00
z z z z z z z z z z z z z z z z z z z	38.UU	9.00

Trimo Basin Wrenches



Andree Basin Wrenches



Reversible jaw operates either right or left. Guaranteed to apply and remove any basin cock nut and not slip. Made of drop forged steel, strong and durable. Is 8

	and weighs but a pound.	
Price, with	Large Jaw only each	\$4.00
46 66	Large Jaw onlyeach Both Large and Small Jaws "	4.80

Round Bastard Files

Size.....inches 12 14 \$4.30 5.60 7.50 10.70

Price.....per dozen

Flat Bastard Files



Size.....inches Price.....per dozen \$5.30 7.00 9.70 13.30

Mill Bastard Files



10 Sizeinches 14 Price......per dozen \$4.30 5.60 7.50 10.70

Half Round Bastard Files



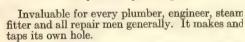
Length....inches 10 Price..... per dozen \$7.50 9.10 11.80 15.50

Half Round Rasps



Length inches 8 10per dozen \$10.10 13.70 18.70 24.80 Price ...

Rapid Tap Plugs



Size Thd. In.	Price per Doz.	Size Thd. In.	Price per Doz
	\$3.25	7/16	\$4.00
5/8	3.50	1/2	4.00
1/4 5/6 3/8	3.50	9/16	4.25

No. 3830 Boiler Repair Bolts

This repair is for use on jobs where the metal is rather thin at the point of leakage.

Will give satisfaction in such cases.

Well and strongly made.

Fitted with extra durable rubber washer.

Price, No. 3830per doz. \$2.50

Skinner Valve Reseating Tools



For reseating all flat and taper seat. globe or angle valves, in place, accurately and quickly. This tool lines up through the bonnet insuring an accurate cut. Each cutter has 2 parallel blades—producing an offset or shaving cut. Fits all globe valves.

This is the only inexpensive tool with mechanical screw feed. It can not chat-

Good valves can be reseated 10 to 20 times.

The first 2 or 3 jobs pay for the tool. Operated with bit brace provided.

For taper seat valves, turn cutter other side up.

Packed in hardwood case and is guaranteed against defects.



Range	Weight	Size of Box	Price
Inches	Pounds	Inches	Each
1/2 to 2	$^6_{12}$	$9\frac{3}{4}$ x5\frac{3}{4}x2\frac{1}{4}	\$20.00
1/2 α 3		13\frac{1}{4}x7\frac{1}{4}x2\frac{1}{4}	30.00

Skinner Bibb Reseaters

The Skinner Bibb Reseater is fed by a thread, making good mechanical results.

The bonnet is slipped off the leaky faucet and the tool inserted, fitted with proper cutter. Turn the feed screw down until the cutter rests lightly on the bibb seat. Then turn the wheel steadily, unyieldingly with occa-sional slight twists of the feed screw

Equipped with three cutters. For \$6, \$2, \$8 and \$4-inch bibbs of the same material and workmanship as the cutters furnished with the Skinner Valve Reseater. Priceeach \$2.00



No. 4170 Johnson Improved Double Cone Faucet Seat Dressers



For reseating faucets, basin stops, compression valves, etc. Can be used on inside or outside. Threaded fittings. Four cutters with each dresser.

Made in sizes 1/2, 5/8, 3/4 and 7/8 inch.

Packed one in a box. Weight each, 13 ounces.

Price, No. 4170 each \$3.00

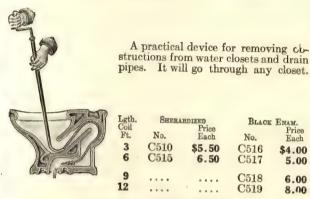


Regular plumbers' friend with cup of good rubber.

Price, 4-inch Cup with 24 inch Handle each

24 " " 24 " 24 " 200

Coleman Flexible Closet Augers



Coleman Sewer Rods



For cleaning out straight sewers or drains. Made of special oil tempered, flat spring, steel wire. Nos. 537 to 542 furnished with spear point and automatic grip handle.

No.	Size In.	Lgth. Ft.	Price Each	No.	Size In.	Lgth. Ft.	Price Each
536	1/4x1/6	25 50 75	\$1.85 3.50 5.00	539	3/4x1/8	\begin{cases} 25 \\ 50 \\ 75 \end{cases}	\$5.00 7.00 10.00
537	½x½	$ \begin{array}{c c} 100 \\ 25 \\ 50 \\ 75 \\ 100 \end{array} $	7.00 2.40 4.50 6.00 8.00	540	1½x½	100 25 50 75	14.00 6.00 9.00 12.00
538	3/4×1/16	25 50 75 100	4.00 6.00 8.00 10.00	542	1½x½	$ \begin{cases} 100 \\ 25 \\ 50 \\ 75 \\ 100 \end{cases} $	16.00 7.00 10.00 15.00 20.00

Thawing Steamers



Made of heavy copper. Fits on top of gasoline furnace. Price....each \$11.00



No. 50 Detroit Fire Pots

For Gasoline

Tank is of heavy gauge seamless steel with welded bottom and brazed fittings. Tinned inside and out to prevent rust. Large filler funnel with dust-proof cap; heavy malleable top plate; heavy upright; one-piece drawn shield, automatic safety pump of large size.

Adjustable needle valve regulates the fire. The new style generator can be removed and cleaned without taking off the coil cup, top plate or uprights. Unscrew the union and generator can be lifted out.

Price, No. 50.....each \$22.00

No. 52 Unique Furnaces For Gasoline

The rapid, scientific method of generation prevents carbonization and clogging. Operates in a high wind or in zero weather. The patented figure 8 seamless drawn steel tubing generator creates an intense heat which will melt 50 pounds of lead in 10 minutes.

The furnace has a patented gate for dislodging generator without dismantling the entire furnace. The automatic orifice cleaner, when turned to and fro, clears the orifice of dirt and foreign particles

This furnace is equipped with a 5-inch top-plate. Special tinner's hood furnished. Capacity, 1 gallon.



Price, No. 52, Weight, 10 Pounds.....each \$27.00

No. 103 Unique Blow Torches

1-Quart Capacity For Gasoline

Designed especially for outdoor work. Has a positive, steady blue flame of intense heat and great force. The simple, natural principle of generation enables the operator to throttle it down to a fine flame without danger of it chilling and going out.

it chilling and going out.

When orifice is clogged with foreign particles, the supply valve should be opened and closed which automatically clears the orifice.

An 18-gauge steel tank with spuds and bottom hand welded.
Shipping weight, 4 pounds

Shipping weight, 4 pounds. Price, No. 103.....each \$20.00

No. 365 Plumbers' Tool Bags



Leather trimmed carpet bag with 3½-inch leather reinforcement on sides and bottom. Top has ¾-inch leather reinforcement.

Price, No. 365......each \$18.00

All Steel Grips



Style	Dimen., In.	Price, Ea.
214	14x 7x 9	\$4.75
216	16x 9x11	5.00
218	18v10v13	5 25

Ideally adapted to plumbers and enginemen. Water-proof and water-tight; perfect protection to clothes and equipment, and is washable. Looks like a traveling bag and is no heavier. Will not warp. Finished in durable brown baked enamel. Fitted with brassed cor-

Fitted with brassed corners, side catches and Corbin notch locks. Leather handle with steel core.

Style	Dimen., In.	Price Ea.
220	20x11x13	\$5.50
222	22x11x13	5.75

All Steel Grips



No	 	 	 	 			 					 		816
Size	 	 	 				 						.inches	16x9x11
Price														\$7 00

Nye Steel Tool Chests



Made of 1/6-inch steel sheet entirely reinforced with 21/2-inch oak cleats.

Heavy steel skids make the chest slide easily over rough surfaces and prevent wear. The lid is held down at the front corners with ½-inch bolts which screw into malleable iron corners having a ¾-inch thread surface.

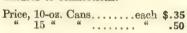
Equipped with six heavy handles, chained lock and keys. Chest is enameled in olive green with cleats in natural color. Furnished with one sliding drawer.

No.	Depth Inches	Width Inches	Length Inches	Price Each
1	11	12	24	\$26.00
2	14	15	30	35.50
3	16	17	36	39.00
4	19	20	42	45.50

Desolvo Sewer and Drain Pipe Cleaner

Desolvo cleans clogged pipes and has solved the problem of removing obstructions in drain, waste, and sewer pipes, or from washstands or closets, caused by the accumulation of grease, soap, rags, hair, paper, vegetables or other organic matter.

It is a combination of mineral elements so intermingled that upon its mixture with water a chemical reaction takes place, generating intense heat and powerful gases. It contains no acids and will not injure plumbing fixtures or connections.





Tite-on Repair Cement

For Vitreous Ware, China Ware and Metals

The white cement is to be used for repairing white ware only, such as cracked or chipped lavatories, chipped bath tubs, chipped ice boxes, chipped gas ranges, repairing tile floors, etc. Is a real success for setting china handles, but needs 12 to 24 hours to harden. Good for repairing cracks and chipped parts in all vitreous china and enameled ware, and for repairing cracked laundry tubs.

The black cement is for repairing all metals, even lead and aluminum ware. Has no equal for repairing cracked sectional boilers, works as well on a wide crack as a narrow one. Also repairs cracked radiators. Will stand heat up to 1200 degrees Fahrenheit and stands expansion and contraction.

Made in white, blue-white and cream-white, gray, brass and aluminum color.

Price upon application.

Whiz Plumbers' Soil



Whiz plumbers' soil ensures a high standard of workmanship due to its easy application and the results obtained.

Lead or brass pipe to which a coating of Whiz plumbers' soil has been applied has absolutely no affinity for solder, which guarantees a uniformly wiped joint with sharp edges.

Cans have improved covers which cannot come off, thus preventing the contents of the can from being emptied into the tool bag, and dirtying the tools.

Price, 4-Ounce Cansper dozen \$2.40



Plumbers' Putty

Best quality putty. It is furnished in 5, 12½ and 25-pound pails.

Prices upon application.

Plumbers' Candles



	Regular	
rice.	per pound 20-pound Boxes each	
æ	50 " " " "	

Price......per pound
" 20-pound Boxes each

Superior Cleanser



Will remove dirt, grease, rust stains, etc., from enameled iron ware without injurious effects, and without destroying the lustre of fixtures.

It requires only to sift a small quantity on a damp cloth with which it is to be applied to enameled surface.

Price, 2 Dozen ½-Pound Cans.....per case \$4.80

Tubola



Scientifically compounded for a polishing cleanser which will not scratch or harm the surface of porcelain or enamel ware.

Porcelain ware or tile can be cleaned very easily by an application of Tubola.

Especially adaptable for use on soda fountains or in grocery or meat sheps, etc., for the cleaning of marble, enamel, or porcelain fixtures.

Copper or brass fixtures will look like new after an application of Tubola.

For cleaning or polishing of cooking utensils, aluminum ware and linoleum, Tubola is unexcelled.

Put up in 12-ounce cans, packed 24 in a carton.

..... per dozen \$3.00

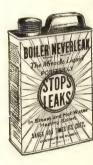
KASP OF THE STATE
Price....

K K Closet Cleaner

A chemical compound in powder form. Perfectly sanitary, odorless and harmless. Cleans without dipping the water out of the bowl and will not injure the bowl or connections. Simply shake a little into the bowl and flush.

Price, 24-ounce Cans.....each \$.25 24 " per dozen 3.00

Boiler Neverleak



Guaranteed to stop all ordinary leaks and cracks in hot water heating boilers; also steam boilers below water line, provided directions are followed and fire is kept up under boilers for not less than three hours after Neverleak has been

It is not necessary to know what sections or tubes are leaking, or to lose use of the boiler. All that is necessary is to build a coal fire under boiler, heat water throughout boiler to at least 150° and pour the Neverleak directly into the water.

Price.		\$6.00
66	Half-gallon Cans	10.00
66	Gallon Cans	18.00



Lard Oil

Pure winter strained lard oil. Put up in woodjacketed cans.



Dixon's Ticonderoga Flake Graphite

Prepared in the coarser (or No. 1) flake, and the powdered flake (or No. 2) size.

This graphite is indispensable to engineers and mechanics for coating gaskets and packing, for pipe fitting, etc.

			No. of	Price		Price
	Size		Cans	per	Price	per
No.	Pkg., Lbs. Style of Pa	ckage	in Case	Case	Each	Pound
632	1 Paper Cans.		36	13.80	\$.45	
633	5 Screw-Top T		10	18.50	2.00	
634	10 " "	ec ec	5	18.00	3.75	
644	25 Boxes				8.75	
645					16.50	
646	100 Kegs					\$.32
6461/2	200 "					.31
647	400 Barrels					0.0

Nos. 1 and 2 Smooth-On Iron Cements



Nos. 1 and 2 Cements are put up in blue labeled cans and steel kegs. They come in powder form and are used by mixing with water to a stiff putty. No. 1 is quick hardening. No. 2 is slow hardening. These cements are used for repairing leaks or breaks in iron or steel castings, making tight seam or flanged joints on old or new work, and stopping leaks of steam, water, fire, oil or gas in boilers, furnaces, stoves, radiators, pipes, tanks, water jackets, etc. Used on iron, steel, brass, copper, aluminum, wood, etc.

	BLUE LABEL	ED CANE			STEEL	Kegs-	
Wt.	Price	Wt.	Price	Wt.	Price	Wt.	Price
Lbs.	per Lb.	Lbs.	per Lb.	Lbs.	per Lb.	Lbs.	per Lb.
7/1e	\$.30	5	\$.44	25	\$.33	100	\$.29
1	.50			50	.31		

No. 693 Dixon's Graphite Pipe Joint

Compound



Dixon's Graphite Pipe Joint Compound is not a cement which hardens, but rather a true lubricant for the threads of pipe bolts, nuts, turnbuckles, etc., making them easy to screw up and allowing them to be taken apart without damage or trouble. Also valuable on flanges, gaskets, etc.

Packed in a tin can, weight, 1 pound, 36 in a case.

Price, No. 693.....per pound

Tasgon



A few drops of Tasgon will dissolve rust and loosen every rusty nut, bolt, coupling, union bushing or connection of any kind.

It will not injure metal. No clipping or cutting.

No time is wasted and no parts are destroyed.

Cleans and lubricates all rusty surfaces.

Size Can Pints	Description	Price per Can
1/4	With Nozzle Top	\$.40
1	" Plain "	1.00
8	u u u	5.00

Useful Information

Properties of Saturated Steam

						Total Heat
						Required to
						Generate
				7		1 Lb. of
				OLUME -	2	Steam from
Press	TTOTAL	Temperature		Cu. Ft. o		Water at 32°
By .	CEL	in	Compared	Steam from	Latent	under
Steam		Fahrenheit	with	1 1 b.	Heat in Fahrenheit	Constant
Gauge	Total	Degrees	Water	of Water	r Degrees	Pressure in Heat Units
0	15	212.	1642	26.36	965.2	1146.1
5	20	228.	1229	19.72	952.8	1150.9
10	25	240.1	996	15.99		
15	30				945.3	1154.6
20		250.4	838	13.46	937.9	1157.8
	35	259.3	726	11.65	931.6	1160.5
25	40	267.3	640	10.27	926.	1162.9
30	45	274.4	572	9,18	920.9	1165.1
35	50	281 .	518	8.31	916.3	1167.1
40	55	287.1	474	7.61	912.	1169.
45	60	292.7	437	7.01	908.	1170.7
50	65	2 98.	405	6.49	904.2	1172.3
55	70	302.9	378	6.07	900.9	1173.8
60	75	307.5	353	5.68	897.5	1175.2
65	80	312.	333	5.35	894.3	1176.5
70	85	316.1	314	5.50	891.4	1177.9
75	90	320.2	298	4.79	888.5	1179.1
80	95	324.1	283	4.55	885.8	1180.3
85	100	327.9	270	4,33	883.1	1181.4
90	105	331.3	257	4.14	880.7	1182.4
95	110	334.6	247	3.97	878.3	1183.5
100	115	338.	237	3.80	875.9	1184.5
110	125	344.2	219	3.51	871.5	1186.4
120	135	350.1	203	3.27	867.4	1188.2
130	145	355.6	190	3.06	863.5	1189.9
140	155	361.	179	2.87	959.7	1191.5
150	165	366.	169	2.71	856.2	1192.9
This	table	gives the	_		perties of	

This table gives the value of all properties of saturated steam required in calculations connected with steam boilers

Useful Information Steam

A cubic inch of water evaporated under ordinary atmospheric pressure is converted into 1 cubic foot of steam.

The specific gravity of steam (at atmospheric pressure) is .411 that of air at 34° Fahrenheit, and .0006 that of water at the same temperature.

27222 cubic feet of steam weigh 1 pound; 13817 cubic feet

of air weigh 1 pound.

The best designed boilers, well set, with good draft, and skillful firing, will evaporate from 7 to 10 pounds of water per pound of first-class coal.

In calculating horse-power of tubular or flue boilers, consider 15 square feet of heating surface equivalent to 1 nominal

horse power.

On 1 square foot of grate can be burned on an average from 10 to 12 pounds of hard coal, or 18 to 20 pounds soft coal, per hour, with natural draft. With forced draft nearly double these amounts can be burned.

Steam engines, in economy, vary from 14 to 60 pounds of feed water and from $1\frac{1}{2}$ to 7 pounds of coal per hour per in-

dicated horse power.

Condensing engines require from 20 to 30 gallons of water to condense the steam represented by every gallon of water evaporated in the boilers supplying engines—approximately for most engines, we say, from 1 to 1½ gallons condensing water per minute per indicated horse power.

Surface condensers should have about 2 square feet of tube (cooling) surface per horse power for a compound steam engine. Ordinary engines will require more surface according to their economy in the use of steam. It is necessary to place air pumps below condensers to get satisfactory results.

Ratio of Vacuum to Temperature

00	Inches	Vacuu	$\mathbf{m} \dots 212^{\circ}$	271/2]	Inches	Vacuum	7	112°
11	44	44	:190°	$28\frac{1}{2}$	46	46		92°
18	"	66	170°	29	46	"		72°
$22\frac{1}{2}$	44	#	1.150°	$29\frac{1}{2}$	66	46		52°
*25	es.	u	135°					

*Usually considered the standard point of efficiency—condenser and air pump being well proportioned.

Useful Information

Steam Boilers

May be classed under two heads, as all are, without exception, either fired externally or internally. The relative economy of the two systems is largely determined by the furnace construction, plus or minus the loss of heat by radiation in the same.

The loss in boilers fired externally consists in the radiation of heat through the brick setting, while in boilers fired internally the fuel is consumed in close contact with the furnace sheets which are a component part of the boiler structure, and as the heat is transmitted directly to the water which surrounds the furnace, the loss by wasteful radiation is comparatively small. Hence, practice bears out the statement of Stephen Roper, the eminent engineer, that the internally fired is the most economical type, and that such a boiler will save its cost in less than its reasonable life.

Boiler Horse-power

Conditions modify all calculations in determining the horsepower of a boiler, such as design, quality of the material of which it is made, facilities for cleaning, impurities in the water, calorific power of fuel used, attendance, and draught of chimney, etc.

Moreover, no dogmatic set of rules will insure satisfactory results in every case of boiler construction, as the factors of grate and heating surface, temperature of feed water, proper control of air to support combustion, steam and water space, circulation of water within the boiler, all vary with each type of boiler used, and even with different proportions in the same type. Hence this article is only intended to give an approximate statement of the case as shown in existing formulas.

Approximately, the horse-power, if externally fired, may be calculated by multiplying in inches % of the circumference of the shell by its length, then multiply the product of the area of all the flues or tubes by their length, add these products together and divide by 144 to find square feet, then divide this quotient by 14. 144 represents the square feet of heating surface in the shell, tube and flues, and 14 the square feet of heating surface usually allowed per horse-power.

For internally fired boilers multiply in inches the circumference or square of furnace by its height, then multiply the circumference of one tube by its length, and this product by the entire number of tubes, taking into account also the square inches of surface presented by the crown or tube sheet. Add these quantities together and divide by 144, the quotient will be the heating surface in square feet, and this, when divided by 14, the last quotient will be the horse-power.

With a good draught for the furnace, 10 square feet of heating surface, ½ a square foot of grate surface, 8 lbs. of good coal and 1 cubic foot of water evaporated per hour may be estimated for each nominal horse-power that the boiler should develop.

For Cylindrical Boilers

Each nominal horse-power requires 1 cubic yard capacity, 1 square yard of heating surface, 1 square foot of grate bar surface, 1 cubic foot of water evaporated per hour and 28 square inches of flue area. The area for entrance of air to ash pit should be ¼ of area of grate; depth of ash pit, 1 foot 6 inches to 2 feet 6 inches.

The grate-bars should incline downwards towards the front, 1 inch per foot; not over ¾ inch thick and ¾ to ¼ inch spaces between.

The furnace should have at least 3 cubic feet of space above each square foot of grate surface.

For Horizontal Tubular Boilers

The length of tubes should be 48 times the diameter. For soft coal 4-inch diameter gives the best results, with 1 inch space between the tubes, and $2\frac{1}{2}$ inch space between tubes and shell of boiler. Tubes should be set in vertical rows to facilitate cleaning.

Useful Information

Steam Coils for Domestic Purposes

A steam coil immersed in water will condense about 100 times as much steam as it will surrounded by still air.

A brass or copper pipe surrounded by water will give off about 200 thermal units per square foot of surface per hour for each degree difference in temperature between the steam and the surrounding water. This is assuming that the water in the tank or boiler is moving over the coil at a moderate velocity. In assuming the temperature of the water, take the average between that of the inlet and outlet. To arrive at square feet coil necessary to heat any given quantity of water in a given time to a certain temperature-first reduce the gallons of water to pounds; then by taking the temperature of inlet from required temperature we get degrees water is to be raised; these quantities multiplied together give heat units required to raise the water to desired temperature this will be the dividend. Next get the average temperature by taking half the sum of the inlet and outlet temperature; then find the temperature of the steam and deduct from it the average temperature of the water and multiply by 200 for a divisor. Example: How many square feet of heating surface will be required in a brass coil to heat 120 gallons of water per hour from 40 to 120 degrees with steam at 3 pounds pressure.

Water to be heated. Rise in temperature Thermal Units required. Average temperature of water in con-	$ \begin{array}{c} 120x8\frac{1}{3} = \\ 120-40 = \\ 1000x80 = \end{array} $	80	pounds degrees
Temperature of steam at 3 pounds	120+40=	80	и
Difference between 220° and average		220	66
Then the B. T. II per square fact of	80°=	140	"
surface given up to the water Coil required=800002÷8000	140x2000=	=28000 2:85 s	

Size of Heater

The size of the heater to warm in one hour the quantity of water to the temperatures given in the example depends upon how much coal is burned per hour per square foot of grate. Five pounds is a fair average for such work, and with good combustion the available heat units per pound of coal is about 8000. As this example requires 80000 heat units to heat the water per hour, the grate surface will equal $\frac{80000}{5\times8000} = 2$ square feet.

This requires a heater with 19-inch grate. To heat the water in two hours would require just half the grate or a heater with 14-inch diameter grate. In four hours a heater with 10-inch diameter grate.

Chimney Flues

Areas of chimney flues should approximate one-sixth the listed grate areas of boilers connected to them when the fuel used is hard coal, and one-fifth when soft coal.

No boiler will give the best results if connected to an imperfect chimney flue. The most common defect is lack of capacity, and we frequently find buildings with flues utterly inadequate for the service required. People often burn paper in a chimney, and if the flame is drawn quickly upward the flue is considered equal to any requirement. This is likely to be a serious mistake, and while a strong draft will compensate to some extent for lack of area, the only safe course is to build flues sufficiently large to do their work easily. The difference in cost is not worth considering in view of the trouble to be avoided.

Flues should be perfectly straight, plastered smoothly inside, and never less than eight inches deep. A square flue will have a better draft than an oblong flue of equal area. Round tile flues are best. Flues should be built in inside walls wherever possible, and so located that the smoke pipe shall be very short. They should always be carried above the highest point of the building or adjacent buildings. Sometimes several flues are built in one chimney, all connected together in the ash pit. In such cases, if one of the flues is connected with a fire place, or any other opening, it will spoil the draft, no matter how good the flue may be.

Direct			The same of			TALLED A	THE Y DO.
Direct			Direct	Direct			73.1
Steam		Size					Direct
	THE REAL PROPERTY.		Water	Steam		Size	
Radia.	Horse	Chimney	Radiation		TT		Water
				nadiation	Horse	Chimney 1	Radiation
Sq. Ft.	Power	In.	Sq. Ft.	Sq. Ft.	Domes	T.	
-	-		od. re	MAN T. R.	Power	In.	Sq. Ft.
250	2.5	8x 8	400	1400	14 0	4	-
					14.0	12x16 -	2400
300	3.0	8x 8	500	1600	16.0		
400	4.0					12x16	2700
		8x 8	700	1800	18.0	12x16	
500	5.0	8x12	850				3000
				2000	20.0	12x16	3400
600	6.0	8x12	1000	2200	22.0		
700	7.0					16x16	3700
		8x12	1200	3000	30.0	16x16	
800	8.0	12x12	1350	0.000			5100
900				3500	35.0	16x20	5900
300	9.0	12x12	1500	5000	50.0		
1000	10.0					16x20	8500
		12x12	1700	5500	55.0	20x20	
1200	12.0	12x12	2100				9300
	0	14414	2100	8000	80.0	20x20	13000
							19000

Useful Information Galons Discharged per Hour Through Various Sized Orifices Under Stated Pressures

		OILCU	OTTHECES	Ollder	Stateu	Fressures	
		Pounds					
	lead	Pressure		-DIAMET	ERS OF OR	FICES IN INCHE	8
	in 'eet	per Square Inch		AND		OF AN INCH-	
x	-		1/4	3/8	1/2	5/8	3/4
	20	8.66	300	720		0 1920	2760
	40	17.32	450	960	180	0 2760	3960
	60	25.99	540	1200		3480	4800
	80	34.65	620	1380	2460	3840	5580
	00	43.31	690	1560	2760	0 4320	6240
1	20	51.98	780	1680	3000		6840
1	40	60.64	816	1860	3300		7320
1	50	64.97	840	1920			7620
1	75	75.80	900	2040	3660		8220
2	00	86,63	960	2220	3900		8760
2	35	101.79	1080	2460	4320		11160
		Pounds		= 100	1020	0200	11100
	ead	Pressure		-DIAMETE	RS OF ORTE	ices in Inches-	
	n	per Square		AND I	FRACTIONS	OF AN INCH-	
	eet	Inch	1	11/4	11/2	13/4	2
	20	8.66	4920	7380	1110	0 15120	19740
	40	17.32	6720	10920	15720	0 21360	27960
	60	25.99	8580	13380	1920	26220	34260
	80	34.65	9840	15480	22260	30300	39540
	00	43.31	11040	17280	24900		44280
12	20	51.98	12120	18960	27240		48480
14	40	60.64	13020	20160	29460		52320
15	50	64.97	13560	21180	30480		54120
17	75	75.80	14640	22800	32880		58560
20	00	86.63	15600	25020	35880		62580
23	35	101.79	17100	26760	38520		68460
	The					02200	

The pressure or head of water is taken at the orifice, no allowance being made for friction in the pipe. In practical calculations to determine the height which water can be thrown, the head consumed by the friction of the water in flowing from the source to the orifice must be considered.

Surfaces and Capacities of Pipes Sizes of Pipes, inches 3/4 1/2 11/4 11/2 2 Actual Inside Diameter inches .623 .824 1.048 1.380 1.611 2.067 Outside Circumference of Pipes . . . inches 2.652 3.299 4.136 5.2155.969 7 461 Actual Outside Diameter.....inches Length of Pipe in Feet ...inches .84 1.05 1.315 1.66 1.9 2.375 per Square Foot of Outside Surface. 4.52 3.63 2.90 2.30 2.01 1.61 No. of Square Feet of Outside Surface in 1 Lineal Foot of Pipe .22 .27 .34 .43 .50 . 62 Cubic Inches of Internal Capacity in 10 Lineal Feet of Pipe 36.5 63.9 103.5 179.5 244.5 402 6 Weight of Pipe per Foot . . . pounds Weight of Water in .84 1.11 1.67 2.24 2.68 3.61 10 Lineal Feet of Pipe pounds 1.38 2 31 3.75 6 5 8.8 14.6 Sizes of Pipes, inches 21/2 3 31/2 4 41/2 5 Actual Inside Diameter inches 2.468 3.067 3.548 4 026 4.508 Outside Circumference of Pipes . . inches 9.032 10.99 12.56 15.70 17.477 14.13 Actual Outside Diameter . . . inches 2.875 3.5 4. 4.5 5. 5.563 Length of Pipe in Feet per Square Foot of Outside Surface. . 1.32 1.09 .954 .849 .763 .686 No. of Square Feet of Outside Surface in 1 Lineal Foot of Pipe. .75 .92 1.05 1.31 1.456 1.18 Cubic Inches of Internal Capacity in 10 573.9 886.6 1186.4 1527.6 1912.6 2398.0 Lineal Feet of Pipe. Weight of Pipe per Foot pounds Weight of Water in 5.74 7.54 10.66 12.34 14.617 10 Lineal Feet of

Pipe pounds

20.8

32.1

43.6

55.4

69.3 86.73

Useful Information

Wrought Iron and Steel Pipe

Safe Working Pressures

Numerous factory tests to determine the actual bursting pressure of wrought pipe have proved Barlow's formula to be correct. This formula follows:

 $\text{BP equals } \frac{\text{2TXTS}}{\text{OD}}$

in which BP equals bursting pressure in pounds per square inch.

T equals thickness of the wall in inches.
OD equals outside diameter of the pipe in inches.
TS equals tensile strength of material per square inch.

The value of TS was determined from actual tests to be 40000 pounds per square inch for butt welded steel pipe and 50000 pounds for lap welded steel pipe.

The table following is based on the formula given above. The working pressures given are based on a factor of safety of eight.

Theoretical Bursting and Working Pressures

Pounds per Square Inch

	Stane	tand	Extra 5	24	Dou	ble
	Bursting	Working	Bursting	Working	Extra S	
	Pressure	Pressure	Pressure	Pressure	Bursting Pressure	Working
Size	Barlow's	Factor	Barlow's	Factor	Barlow's	Pressure
In.	Formula	8	Formula	8	Formula.	Factor 8
1/					Formula	- 0
78	13432	1679	18760	2345		
1/4	13032	1629	17624	2203		
1/8 1/4 3/8	10784	1348	14928	1866		
1/2	10384	1298	14000	1750	28000	3500
1/2 3/4	8608	1076	11728			
1				1466	23464	2933
1	8088	1011	10888	1361	21776	2722
11/4	6744	843	9200	1150	18408	2301
11/2	6104	763	8416	1052	16840	2105
2"	5184	648	7336	917	14680	
	0101	0.10	1000	911	14000	1835
21/2	5648	706	7680	960	15360	1920
3	4936	617	6856	857	13714	1714
31/2	5610	701	7950	994	15900	1987
-	- 100				10000	1001
4	5266	658	7480	935	14970	1871
41/2	4940	618	7100	887	14200	1775
5	4630	579	6740	842	13480	1685
1	9.300	0.0	0.10	012	19400	1000
6	4220	528	6520	815	13040	1630
7	3940	493	6550	819	11470	1434
8	3730	466	5780	722		
-	13	400	0100	124	10140	1267
9	3550	444	5190	649		
10	3390	424	4650	581		
12	2940	368	3920	490		
-	2010	000	0020	490		

		Large	O.D.	
Size In.	3% In. Thick Bursting Pressure Barlow's Formula	Working Pressure Factor 8	½ In. Thick Bursting Pressure Barlow's Formula	Working Pressure Factor
14	2680	335	3570	446
15	2500	313	3333	417
16	2340	293	3120	390
18	2080 -	260	2770	346
20	1870	234	2500	313
22	1700	213	2270	284
24	1560	195	2080	260

In the above table, butt welded pipe was figured on sizes 3-inch and smaller and lap welded pipe sizes 3½-inch and larger.

	Weight per Foot	.426 .570 .855 .140 690		88888888		an
	& maide Orcum,	144 954 969 969 969	4.335 5.058 6.494 7.757 11.146	648 10. 156 12. 856 14. 054 19. 063 23. 073 28.	88	lichig
			10.6	12.6 14.16 15.8 19.0 22.0 25.0	ong	oit, M
	Outside Circum.	2.639 2.639 3.299 4.131		14. 13 15. 70 17. 47 20. 81 23. 95 27. 096	Price of Pipe per Foot Actual Inside Diameter Extra Strong Luches—Total Distance Fipe Screws into Fitting	Copyright Owned by United States Radiator Corp., Detroit, Michigan
		. 250 . 250 . 250 . 494	658 704 704 679 679	3.174 3.668 4.300 6.926 8.399	ra Stro ible Ex	Corp.,
	Sen Abiside Area	101 304 533 864	496 036 356 778 393 887	15.730 15.947 20.006 28.890 38.780 50.027	Price of Pipe per Foot Thickness Actual Inside Diameter Extra Strong Double Extra Incless—Total Distance Pipe Screws i	adiator
	gorte Area	223 358 554 1.358		904 935 306 472 664 426	Price of Fipe per Foot Thickness Actual Inside Diamete Inches—Total Distan	ates K
			548 548 548 548	020 506 047 065 023 981	Pipe p	nted St
	Actual Outside Diam.			563 5. 625 6. 625 7. 625 7.	Price of P Thickness Actual Ins Inches—T	by Ur
	8 111.68 2.21 1.46 8.62 1.00 8.53 8.33 8.33 8.33 8.33	11111		4101001-00	2.82 7.625 6.875 1.46	wned
	212100 000 mg)	11111	111111	11111	5 7. 2.	gnt O
	10.88 10.88 2.11 1.36 7.62 7.54 7.34 1.34 7.34			-	2.35 .301 6.625 5.875 1.36	Copyri
	8 10.08 2.01 1.26 6.62 6.62 6.54 6.34 6.34 6.34			9	1.88 2.286 5.751 4.875	
	8 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			10	1.45 .258 4.813 4.063 1.10	
	88.80 11.185 11.100 5.000 1.100 1.00			41/2	1.30 247 4.280 3.564 1.10	
	8 8 8 8 8 40 11.80 11.80 11.05			, , , , , ,	1.08 237 3.818 3.136 1.05	
77	8 8.00 11.75 11.00 4.00 3.938 3.738 3.44 3.44		31/2		95 226 358 716 00	
Data	8.7.60 1.70 1.70 3.50 3.243 3.243 3.243 3.243 3.243		69		755 216 892 382 284 284 205	
	1883 8 17	11111			ଦାଦା	TOTAL
ad L	2.5%		21/2		.36 .575 .154 .203 .933 2.315 .491 1.755 .58 .89	
חור	1112 6.67 1.10 1.10 2.37 2.37 2.201 2.201 2.201 2.201 2.201 2.201 2.201 2.201		64		.36 .154 1.933 1.491 .58	
Wrodyne	111½ 6.33 1.07 1.07 1.90 1.866 1.728 1.33 1.33		11/2		. 225 . 27 . 140 . 145 1. 272 1 494 1 . 884 1 . 088 1 . 54 55 8	tana i
3	113 6.21 1.06 1.06 1.66 1.627 1.488 1.488	71	*		1.272 1.272 1.272 .884 .54	1
	5.87 1.03 1.03 1.31 1.283 1.144 1.144 1.144	-	2		.165 .133 .951 .587	
	14 -83 -83 -40 1.05 1.05 1.025 -911 -911	**			.115 .736 .422 .402	
-	14 5.46 39 .39 .840 .057 .702	72			.085 .109 .542 .244 .39	
	18 63 63 64 65 65 65 65 65 65 65 65	%			.055	1
	118 622 622 622 623 623 74 75 75 75 75 75 75 75 75 75 75 75 75 75	1111		7	055 088 294 29	
	5.13 1.41 1.40 1.029 3.93 3.34				055 068 205 19	-
		+ 02 12 00 12 =	0000100	# > > = 0	Sadiating Surface	
	Top.	5.059 4.547 3.638 2.905 2.905	2.010 1.608 1.329 1.091 .955	5.86.794	ni eqiq to digne, ese per Square ro ebistuO too	
	200 A00	7.748 6.141 4.636 3.641	848 848 547 145 077	2483	eet per Square oot Inside Sur- ace	
	of Tape of Pipe Pipe Pipe 1106	275 275 3445 434		G 60 44 60 00	agist 1001 isani.	
	5 . 4 . 4 . 4 . 4 . 4 . 4 . 4 . 4 . 4 .				duste Feet of Justide or Radi- Justing Surface per	3
	thread, per Inch of Sere berfeet Threads of Thread and Length retted Thread meter of Perfeet Thread tread ter of Thread at End of ter of Thread at End		2.073 3.201 4.281 5.512		on on in bontain of the off th	1
	Intreads, per Inch Perfect Threads. In of Thread and meter of Perfect meter of Perfect meter of Thread at the of Thread at the of Thread at the of Thread at read per Inch of Drill.	000000000000000000000000000000000000000		981118	eqiq to too- ounds of Water	1
	eads)	3.5	7733 913 077 2479 312	030 .8 197 1.0 984 1.5 717 2.0 878 2.5	.S. Gallons Con- ained in I Lineal	1
	Perfect In of T Ferfect In of T Ferfect In of T Ferfect In meter In meter of tree of In		0.0073	9.030 7.197 4.984 3.717 2.878	set Containing One Cubic Foot	

